

THE  
**SURGICAL INSTRUMENTS  
OF THE HINDUS**

WITH

A Comparative Study of the Surgical Instruments of  
the Greek, Roman, Arab and the Modern  
European Surgeons.

BY

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TO  
THE HON'BLE  
**SIR ASUTOSH MUKHOPADHYAY, Kt.,**  
Saraswati, Sastra-vachaspati,  
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AND

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In recognition of his love of Science, his pre-eminent services to the cause  
of University Education, his administrative ability, and his generous  
liberality to scholars

AS WELL AS

In grateful remembrance of many acts of kindness,

**THIS VOLUME IS**

**DEDICATED**

BY

**THE AUTHOR**



## PREFACE.

For researches into the state of medicine among the Ancient Hindus, we have several sources of information to scrutinise. The remarks of Dr. Payne regarding the sources of information of Anglo-Saxon Medicine may apply here with still greater force.<sup>1</sup>

First is the evidence of contemporary literature about the craft of physicians and surgeons, since we are sure that there has always been a class of medicine men of one kind or another. Thus we find in the Rgveda, the use of artificial limb as a substitute for a limb accidentally lost<sup>2</sup>. From the Mahābhārata,

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<sup>1</sup> Payne's English Medicine in the Anglo-Saxon Times, p. 7.

<sup>2</sup> चरित्रं हि वेरिवाक्षेदि पर्णम्

आजा खेलस्य परितक्षायाम् ।

सदी जहामायौ विशपलायै

धने हिते सर्चं एत्यथस्म् ॥

Rgveda—15th Rk., 1st Mandala, 116 Sūkta.

अगस्त्यं पुरीहितः खेली नाम राजा तस्य भवन्त्यनी विशपलानामस्तौ, सथामे शतुभि, क्षिप्रपदा आसीत् । पुरीहितेन अगस्त्येन स्तूतौ अश्विनौ रात्रौ आगस्त्य आधीमयं पादं समधनान् । तदतदाह 'आजा'—आजौ, सथामे, अगस्त्यं पुरीहितस्य—खेलस्य रात्रतः समधन्वा, विशपलायाया, 'चरित्र'—चरण, 'वेरिव'—दे, पर्क्षिणै, 'पर्ण' परत्वम् इव, 'अक्षेदि हि'—पूरा क्षिप्रमभृत् खलु । हे अश्विनौ । युवां अगस्त्येन स्तूतौ सन्तौ, 'परितक्षायाम्'—रात्रौ, आगस्त्य, 'सदी'—ददानीमेव, 'सर्चं'—सर्चू मन्त्रम् इत्यर्थः, विशपलायै 'आयसौ',—लौहमयीन्, 'जहाम्'—जहामिपलक्षितं पादम्, 'एत्यथस्म्'—सम्बानम् एकौकर्म्मित्यर्थः क्षतवन्तौ ।

we learn that when Pariksit, the king of the Kurus, became certain of his approaching death by snake-bite, due to a curse uttered by a sage, he tried to protect himself by the constant attendance of a number of physicians, who were well supplied with antidotes.<sup>1</sup> Again it is stated that when the great warrior Bhismā was wounded in war, the skillful army surgeons came to him with the necessary medical and surgical appliances to treat his wounds.<sup>2</sup> From the *Mohāvāgga*, we learn that Jīvaka, the personal physician of Buddha, practised cranial surgery with success<sup>3</sup>. In the *Mālavikāgnimitra*, we find the use of charms—a signet

<sup>1</sup> समन्वय भक्तिभिर्दैव स दद्या मन्त्रतत्त्ववित् ।  
प्राप्ताद् कार्यान्वास एकस्थं सुरचितं ।  
रक्षाच्च विद्धे तत्र भिषजशौषधानि च ।  
प्राप्ताशासनसिद्धांश्च सर्वतो वैन्यदीजयत् ।

*Mahābhārata*, Adi Parva, Ch. 42.

<sup>2</sup> उपानिषद्ग्रन्थी वैद्याः शत्र्योहरणकोविदाः ।  
सर्वोपकरणरथ्युक्ताः कुशलैः साधु शिक्षिता ।  
तान् डड्हा जाङ्गवीपुषः प्रोवाच तनय तत्र ।  
घनं दत्ता विस्त्रिता पूजयिता चिकित्सका ।  
एवं गते भयेदानी वैद्यः कार्यमिहासि कि ।  
चतुर्भर्म्म प्रशस्तां हि प्राप्तीर्दिति परमा गति ।  
नैष अभ्यां महीपालाः शरतत्प्रगतम्य से ।  
एभिरेव शरैङ्गाह दग्धव्योऽस्मि नराधिपाः ।  
तच्छुला बचनं तस्य मुखी द्युष्मनस्त्रव ।  
वैद्यान् विसर्ज्यान्वास पूजयिता वयाऽहंतः ।

*Mahābhārata*, Bhismā Parva, Ch. 121,

Vs 5745—5750. (A.S B. Ed.)

ring as a healing talisman for the cure of snake-bite,<sup>1</sup> and also we find there a reference to a class of physicians who specialised themselves in Toxicology (*Viṣa-Vaidya*),<sup>2</sup> and were held in high esteem for their professional skill by the public.<sup>3</sup> From the *Bhojaprabandha*, the administration of some kind of anaesthetic by inhalation before surgical operations can be ascertained. Similarly from the books of Law, we know the relations of the profession to society in general. In the *Manusāṃhitā*, we have unmistakable testimony of the decline of Hindu surgery as the author prohibits the eating of cooked rice from the hands of a surgeon.<sup>4</sup>

<sup>1</sup> सहि ! देवीए इदं सिपिसआसादी आनीदशागमुद्धासणाह अहुलीअथ सिणिंडं पिभातान्ती तृह उवालमे पडिदक्षि ॥

*Malavikāgnimitra*, Ch. I.

जय ।—जीटु जीटु भडा। धुवसिंही विश्विदी। उदकुमविधारण सप्तसुदिशा कपिदब्बा ।  
गा अर्णोसीच्छुति । घारि ।—एदं सप्तसुदिशम् अहुलीअब्रम् । पच्छा मह हत्ये गाम् ।

*Ibid*, Ch. IV.

<sup>2</sup> परि ।—कैदी दंशस्य दाही वा चतुर्स्यारक्तमीक्षणम् । एतानि दष्टमाचाण-  
मायुषाः प्रतिपक्षयः ॥ ( संप्रति विषवैद्यानाम् कर्त्त्वं । )

राजा ।—जयसेने ! धुवसिंहः चिप्रभाङ्गताम् ॥

*Ibid*, Ch. IV.

<sup>3</sup> निपु ।—पसष्मुहवणो दीसदि । अवि अ धुवसिंहिणा चिङ्गसिदी । मा से  
असङ्गचिक्ष्यं पावं ॥

*Ibid*, Ch. IV.

<sup>4</sup> चिकित्सकान्देवलकान्मांसविक्रियणस्या ।

विपणेण च जीवन्ती वज्जाः स्युर्वृद्धकव्ययोः ॥

*Manusāṃhitā*, Ch. III, 152.

चिकित्सकस्य स्वग्रयोः कूरस्यीच्छिष्ठभीजिनः ।

उयात्रं सूविकान्न च पर्याचान्तमनिदेशम् ॥

*Ibid*, Ch. IV, 212.

Secondly, monuments or inscriptions scattered about the country have to be searched, as references found therein to the science of medicine, are more trustworthy than documents which may have been more or less tampered with by interpolations of subsequent writers. Thus we learn from the Edicts of Asoka, that hospitals were established by him in different parts of his kingdom, not only for the treatment of suffering humanity but also for the brute creation<sup>1</sup>.

Thirdly, personages and scenes in connection with medical practice, and figures of herbs may have been represented in works of art which must be thoroughly examined. But unfortunately we do not possess any such work of art and so we can learn nothing to our purpose from this source. In the interpretation of the subject of the Friezes of the Rani Naur and Ganesha's Cave, Dr. R. L. Mitra says,—“The shampooing in the Ganesha Cave may be for a parent, but the close seat with the right hand round the neck of the male personage in the other, would be highly unbecoming in an unmarried female. But if the stooping figure be taken to be that of a wounded man, a wounded priest for instance, the lady may be a maiden nursing him without any offence to propriety. It is true that the appearance of the figure on the mattress does not indicate suffering from a wound, but in the Rani Naur frieze, the stooping head affords some indication of it”<sup>2</sup>

पूर्वे चिकित्सकस्याद्व पुंश्चल्लास्तत्रभिन्निर्विषयम्।

विषा वार्दुषिकस्याद्व शलविज्ञेयिणी मत्तम्॥

Manusamhitā, Ch. IV, 220.

Rock Inscriptions, Edict II.

<sup>1</sup> The Antiquities of Orissa, Vol. II, p. 11

Fourthly, the various kinds of surgical instruments preserved in museums are to be examined and the reports of finds of surgical appliances in various localities are to be studied. We know what a flood of light has been thrown on ancient Greek surgery by the steady progress of archaeological discovery and finds of instruments at Pompeii, Herculaneum and elsewhere, and by the study of the specimens preserved in the Naples museum, the Athens museum and other museums of Europe. But as far as I have been able to trace, our museums contain no finds supplying us with any information on the subject.

Fifthly, the literature of medicine itself should be thoroughly inquired into and excerpts elucidative of our subject should be compared with one another. "The detailed descriptions of the very numerous Hindu instruments not being very minute or precise, Professor Wilson says, we can only conjecture what they may have been, from a consideration of the purport of their names, and the objects to which they were applied, in connection with the imperfect description given." We are fortunate, however, in possessing a copious medical literature of great merit from very early times. We shall describe the important books in the introductory chapter, with short notices of their authors.

Sixthly, the comparative study of the science at the same period in other countries also furnishes us with valuable materials, as regards the state of medicine in a country. It is well known that Sanskrit works are often written in a very terse language

and it might be said with greater truth about the works of early Sanskrit authors, the comment of a learned critic about the style of Thucydides, the famous historian,—“the most obvious and characteristic of his peculiarities is an endeavour to express as much matter as possible in as few words as possible, to combine many thoughts into one, and always to leave the reader to supply something of his own. Hence his conciseness often becomes obscure.” I could not form any idea as to the shape of some of the surgical instruments from the descriptions given in the text books, and the commentators are often silent on those passages. But when I read the accounts of similar instruments in Greek and Roman literature, my difficulties at once cleared up. We know with what brilliant results comparative mythology and comparative philology have been studied of late years, and I am sure that a comparative study of medical science by scholars will lead to interesting discoveries. So I have added descriptions of the instruments according to the Greeks, Romans and Arabs at the end of the descriptions given in Sanskrit books. the former serving as commentaries on the latter.

Seventhly, in the accounts of historians, travellers and pilgrims from foreign countries, may be found notices of medical science, as they saw it practised during their sojourn in a country, and such impressions, if properly collated, may bear impartial testimony to the progress of the science at the time. Again, we must enquire if the original treatises of medicine can be proved to have been translated into different languages and whether the remedial agents of a country can be traced in the ~~Ph~~ ~~poem~~ of different nations. Thus we

learn from the accounts of Houen Tsang and Fa Hian that charitable institutions such as hospitals, dispensaries and Pūnyasālās (Houses of Charity) were quite common in ancient India.<sup>1</sup> Arrian informs us in his *Indica* that the study of medicine among the Brahmans was in great favour.<sup>2</sup> We know that the standard works on medicine were translated in Arabic in the 8th Century B. C.,<sup>3</sup> and that various medicinal herbs of Indian origin found their way into the Greek *Materia Medica*.<sup>4</sup>

Eighthly, we must enquire whether the medical practice of ancient times is still resorted to by the physicians of the present days. The Hindu system of medicine is still being practised all over India, more or less in its original form, and so can still be studied at first hand. But for our present purpose, we derive little or no help from the *Vaidas* of the present generation. They know practically nothing about anatomy and surgery which began to decline during the Buddhist era, and finally all vestiges of the science became lost during the Mahomedan rule. I have spared no pains to exhaust these sources of information so far as surgical instruments are concerned. Whether or not I have been fortunate enough to give just the necessary details of instruments from the best accessible authorities without at the same time loading my pages with superfluous matter, must be left to the judgment of my readers to determine.

<sup>1</sup> Beal's Buddhist Records of the Western World, Vol I., P 165, 198 and 214; Vol. II., p 188 and 303.

<sup>2</sup> Arrian's *Indica* c. 27.

<sup>3</sup> Alberus's *India, Sacra et Profana* p LXXX XXXI

<sup>4</sup> Royle's Antiquity of Hindu Medicine p 77 113

Now it may be asked why the Science and Art of Surgery, which was successfully practised in Ancient India, is so much neglected by the present generation of *Vaidas*. So let us consider the causes that led to the downfall of Hindu Surgery.

1. The Hindus from a very early period have given up the dissection of human bodies—the only trustworthy method of acquiring anatomical knowledge—merely because it may occasion ceremonial uncleanliness. The Ancient Hindus were, however, free from such prejudices. Manu lays down that mere bathing will purify a Brahman who has touched a corpse,<sup>1</sup> whilst stroking a cow or looking at the Sun, having only sprinkled his mouth with water will remove the defilement due to touching a dead bone<sup>2</sup>. But even in the *Manusamhitā*, we can trace the decline of Hindu surgery, and his law forbidding any one from eating food from the hands of a doctor evidently refers to a surgeon.

2. The interference of the priests in India, as in Europe played an important part. They began to cure diseases by spells, charms, texts and drugs, and temples have served as consulting rooms for the treatment as much of the diseases

<sup>1</sup> दिवाकर्त्तिसुदका च पतित सूलिका तथा ।

श्व तत्यृष्टिन चैव सूहा कानेन श्वयति ॥

The Institutes of Manu, Ch V, 85.

<sup>2</sup> नारं स्फुशस्य सखे ह साला विद्रो विश्रव्यति ।

क्राचमैव सु निज्ञेह नाभालभ्यार्क्षीच्यवा ॥

Ibid, Ch V, 87.

of the body as of the soul. The example of such a temple we still find in Tārakeśvar where many sick people repair to have their maladies cured by dreams, hypnotic suggestions and incubation or temple-sleep. Similar practice was prevalent in Egypt and Greece in olden times. The modern practice of using galvanic rings and abdominal belts is merely an advanced method of indulging in superstitious ideas.

3 The patients always dreaded the surgeon's knife—especially when the use of a general anaesthetic was unknown. At the same time, the comparative success of poultices, actual and potential cauteries, and other external applications have influenced the lay mind that operations by knife are not always needed.<sup>1</sup> The Hindu surgeons themselves believed in similar tenets, for Suśruta, the surgeon, remarks that "of all cutting instruments and their substitutes, caustics (or vegetable alkalies) are the most important, because by means of them, deep and superficial incisions and scarifications may be made, and derangements of the three humours (air, bile and phlegm) may be rectified", and again he says that "with

<sup>1</sup> दिव्योषधि विना देवि शस्त्रविद्या सुनिष्करा ।  
वैष्णवं कुरते या च दुष्कित्स्ये व्यधान्तरे ॥  
जायन्ते हि यथार्थसि पाटिवानि पुनः पुनः ।  
किं तत्र शस्त्रसाम्य स्यात् सुसिद्धैभेषजैर्विना ॥  
धातुना व्यापदि यच्च भेषजं नैव सिद्धयति ।  
ह्याभये दुसरे तस्मिन् शस्त्रसेव विधीयते ॥  
पुनः संशमनं तत्र धातुनाम् हि प्रशान्तये ।  
प्रदावन्यं मद्दर्दिभि प्रस्त्रादर्ढाकं ब्रवीमि ते ॥

regard to surgical treatment, actual cautery is said to be superior to caustics, in as much as diseases treated with the actual cautery do not reappear, and because it can cure diseases which are incurable by medicines, instruments and caustics"<sup>1</sup>. Thus we see that the Hindus were partial to external applications as a cure of surgical diseases, and gradually they neglected the surgical operations—one of the most important means of acquiring knowledge in Merid Anatomy and of testing the correctness of diagnosis, in the absence of the post mortem examinations of the cadavers. Thus not only surgery but medicine also suffered materially.

4 The Hindus always cherish a high regard for the writings of their sages, and the earliest works on medicine became the standard works and were held sacred. Any violation of their opinions was considered a sacrilege, and all knowledge thus soon became stereotyped. In later times, none dared to question the validity of the statements contained therein, and though about three thousand years have elapsed, and though the votaries of the science are still honoured and wellpaid, the science instead of improving has markedly deteriorated. In fact, only two authors—Caraka and Suśruta—are original; the later authorities—and there is a vast number of them—were merely their servile copyists who only differed from them when they indulged in some grave errors. We have a parallel in the history of medical science in Europe, where Galen

<sup>1</sup> चारदशिर्गीयान् क्रियासु व्याख्यातस्तदाधारान् रीतानामपुनर्भव्यादेषजस्तस्मारेऽसाधानां तत्प्रसाध्यलोक्यः।

held his sway over the profession for about two thousand years.

5. One of the potent causes of progressive decadence in the knowledge and practice of surgery amongst the Hindus is the rapid spread of Buddhism in India. Though Buddha sanctioned the use of the lancet in some cases, in cases of a doubtful nature he prohibited the use of instruments in the treatment of even surgical diseases. For example, he allowed the surgical treatment of boils by knife,<sup>1</sup> but he prohibited not only the use of the lancet for treatment of fistula-in-ano but the use of clysters also.<sup>2</sup> As it would be interesting to know the reasons of this prohibition, I quote the story in full from the *Mohāvīgga* ( Sacred Books of the East )<sup>3</sup>

1. Now when the Blessed One had remained at Sāvatthi as long as he thought fit, he went forth on his journey to Rāgagaha, and wandering straight on he arrived at Rāgagaha; and there at Rāgagaha he stayed at the Veluvana in the Kalandaka-nivāpa

Now at that time a certain Bhikkhu was suffering from fistula. And the physician (named) Ākāsa-gotta lanced it. And the Blessed One when he was going round through the sleeping-places came to the place where that Bhikkhu dwelt.

2. Ākāsa-gotta, the physician, saw the Blessed One coming from afar, and when he saw him he said to the Blessed One : ' Let the venerable Gotama come and look at this Bhikkhu's orifice ;

<sup>1</sup> *Mohāvīgga*, VI 14, 4 & 5.

<sup>2</sup> *Ibid.* VI 22 3.

<sup>3</sup> *Ibid.* VI 22

it is like the mouth of an iguana!' And the Blessed One thinking, 'This foolish fellow is making fun of me,' kept silence and turned away. And in that connection, and on account of that, he called a meeting of the Bhikkhu-samgha, and asked the Bhikkhus: 'Is there, O Bhikkhus, in that Vihâra a Bhikkhu who is sick?'

'There is Lord.'

'What is the matter, O Bhikkhus, with that Bhikkhu?'

'That venerable one, Lord, has a fistula, and Âkâsa-gotta the physician, has been lancing it.'

3. The Blessed Buddha rebuked (that Bhikkhu), saying, 'This is improper, O Bhikkhus, for that foolish one, unbecoming, indecent, unworthy of Samanas, not allowable and ought not to be done. How can this foolish fellow, O Bhikkhus, allow a surgical operation to be performed in that part of his body? The skin there, O Bhikkhus, is tender, the wound is difficult to treat, the knife is difficult to guide. This will not redound, O Bhikkhus, to the conversion of the unconverted.'

And having rebuked him, the Blessed One, after delivering a religious discourse, said to the Bhikkhus: 'You are not, O Bhikkhus, to allow a surgical operation to be performed upon you in that part of your bodies. Whosoever allows that, is guilty of thullakkaya offence.'

4. Now at that time Khabbaggiya Bhikkhus since a surgical operation had been forbidden by the Blessed One

'Is it true, as they say, O Bhikkhus, that the Khabbaggiya Bhikkhus use a clyster ?'

'It is true, my Lord.'

He rebuked them, and having delivered a religious discourse, said to the Bhikkhus : 'No surgical operation is to be performed within a distance of two inches round the anus, and a clyster is not to be used. Whoever does so, is guilty of a thullakkaya offence.'

And thus we find that Jivaka, the famous surgeon, is said to have cured a case of fistula-in-ano by the single application of an ointment<sup>1</sup>. The operation fell into such disuse that when Śankarāchāryya suffered from the same disease, no surgical aid was thought necessary by the physicians, though it is said that he was treated by renowned doctors of the time.<sup>2</sup>

From Megasthenes, we learn that "among the Sarmans the Hylobioi (living in woods) were held in most honour, and next to them the physicians, who are mendicants and also ascetics, like the class above them and the class below them,

<sup>1</sup> "And Gīvaka Komārabhaṭṭa healed the fistula of the Magadha King Seniya Bimbisāra by one anointing."

Mohāvāgga (Sacred Books of the East), VIII. 1 15.

<sup>2</sup> अचिकित्स्यभगद्वाच्चरीगप्रसरच्छिणितपङ्गिलस्त्रशार्थां ।

अजुगुप्त्यविशेषधनादिरूपा परिचर्यासक्ताऽस्य तीटकार्यः ॥

\* \* \* \* \* \* \*

निगदिते भुनिनेति भिषग्वरा विदधिरे वङ्घागदस्त् क्रियाः ।

न च अशाम गतीवक्तापत्तीविमनम् पटवो भिषजीभवन् ॥

which consisted of sorcerers and fortune-tellers,<sup>1</sup> and Strabo<sup>2</sup> mentions that these physicians "cured diseases by diet rather than by medicinal remedies which were chiefly unguents and cataplasms"<sup>3</sup>

6. No science can flourish without the support of the government of the day. The Hindus became a subject race; and any departure from the traditional store of knowledge in the shape of improvement in the quality and additions to its quantity was neither tolerated by the people, who are proverbially conservative, nor countenanced by the royal court, for the conquerors brought with them and patronised their own hakeems and doctors. Neither the Mahomedans nor the English have taken any real interest in the Indian Medical Science from preconcieved notions that it contains nothing worthy of their perusal. The *Kavirajes* again are so conservative in their opinions that they can not boldly advocate even the use of such drugs as are of unquestionable value in the treatment of diseases, as for example the use of Quinine in Malaria. To this may be contrasted the behaviour of Bhāvamīśra, who lived about three hundred years back and who adopted many medicaments of foreign origin. The consequence can easily be imagined, and in the language of Elphinstone, can be thus described: "Physicians follow the practice of their instructor without inquiry, and surgery is so far neglected, that bleeding is left to the barber, bone-setting to the herdsman, and every one is ready to administer

<sup>1</sup> The Invasion of Alexander the Great. M'Cordle Appendices. p. 358.  
y XV L 58-60

<sup>2</sup> The of the Great. M'Cordle Appendices. p. 368-69

a blister, which is done with the juice of the euphorbium and still oftner with the actual cautery."<sup>1</sup>

But we need not enlarge any further. The object of this essay is not to write out an exhaustive dissertation on the Hindu medical science but by a few suggestive facts, however imperfect and fragmentary, to stimulate curiosity and divert attention of the diligent scholars to a vast field of research, which seems as yet to have been only partially explored.

It is proper here to acknowledge that I have on all occasions freely availed myself of the labours of Drs Wise, Thakore Saheb of Gondal, and the translators of Suśruta Samhitā in the Bibliotheca Indica, namely, Dutt and Hoernle. It is a great pity that this translation has not as yet progressed beyond three fasciculi. Hoernle's recent contribution, "Osticology of the Hindus," is a move in the right direction and we hope it to be followed by similar enquiries in other branches of the science. Royle for the first time proved beyond doubt the high antiquity of Hindu medicine, and established its right position in the history of the science. Wise is the pioneer of systematic research in this field of study, and his sympathetic appreciation of the Hindu system of medicine will always be remembered with gratitude by our countrymen. Dutt's *Materia Medica of the Hindus* is a work of great merit, and I have derived material assistance from the excellent treatise, "History of Aryan Medical Science," by the Thakore Saheb of Gondal. Dr. Ray's History of Hindu Chemistry is a valuable contribution in the cognate subject of chemistry. I have borrowed from these writers largely, but

I flatter myself it will also be found that I have further collected from various sources a store of valuable information, for which I am in no way indebted to any of my predecessors in the same field of research. The descriptions of the surgical instruments of the Greeks, the Romans and the Arabs, I have taken from the excellent English translations of Paulus *Ægineta*, the Extant Works of *Ætius* and the Genuine Works of Hippocrates, prepared by the renowned Adams, for the Sydenham Society. I have also laid the recent monograph, "Surgical instruments in Greek and Roman times" by Dr Milne, largely under contribution; I only regret that I had no access to the book a little earlier, otherwise much of my labour in search for descriptions of the instruments of the Greeks would have been saved. For the last five years, I have been engaged on this investigation and it was when I had nearly finished, that Milne's book was mentioned to me by the Hon'ble Mr. Justice Asutosh Mookerjee, the Vice-Chancellor of the Calcutta University and the President of the Asiatic Society of Bengal.

To complete the subject, I have added plates of nearly all the varieties of instruments; but they are more or less hypothetical as we do not possess any actual specimens of the instruments of the Hindus. Written descriptions of surgical instruments are uninteresting and often fail to convey the true idea, which could be easily made evident by the pencil. For purposes of comparison I have given drawings of instruments of the Greeks, the Romans and the Arabs, when I thought that they might be of value for the proper elucidation of my subject. I am indebted to many authors

I am indebted to many authors for some of the engravings of the instruments. I have been careful to give the source whence the borrowed ones are taken, as far as I have been able to ascertain them. If this has been omitted in any case, it is from inadvertence, not from design. My best thanks are due to them and I here acknowledge my indebtedness to the authors for availing myself of their labours without their permission. But many new illustrations will be found, and I have appended my name to those drawn by myself. These figures of the surgical instruments would be found to tally better with the descriptions of the instruments given in the Sanskrit books than the illustrations of the previous authors. The drawings of surgical instruments as given by me would look more like the figures in a modern catalogue of surgical instruments. Some of my friends could hardly believe when they saw the plates that these instruments were known to the ancient Hindus at such an early age. This feeling of amazement and incredulity as regards the surgical instruments used by the ancient Hindus has its parallel in the observations of Billroth<sup>1</sup> about the surgical instruments found in the excavations at Pompeu and now preserved in the museum at Naples. He says. "It made a peculiar impression upon me, when I saw before me this two thousand years old surgical armamentarium of a Roman colleague, differing but slightly in the form of the more ordinary instruments from those of our time. *Ais longa utu brevis*" Milne<sup>2</sup> also remarks "The works of those (Paré, Scultetus and Heister) are profusely illustrated with instruments, some of which can plainly be seen to tally exactly with the descriptions of the classical authors."

<sup>1</sup> Billroth's Surgery, Vol. I, Introduction, Page 7 Syd Soc. Ed

<sup>2</sup> Roman Surgical J. ix, P 8

In describing the surgical instruments, I have confined myself strictly to the texts of the authors and commentators whom I have quoted, and have given the original Sanskrit passages in the foot-notes. These will be of great help to scholars who will try to study the subject at first hand, and prosecute further historical inquiries. The references in the foot-notes do not refer to pages of any particular edition of the work, as such pagination causes inconvenience to the readers who may not secure the edition in question; so we have given the section, and chapter of the book which will be found in any edition.

In the translations of Sanskrit passages, I have endeavoured to follow the original as closely as possible, except where a somewhat free rendering was necessary to make the meaning clear.

The dates of the ancient Hindu authors of Sanskrit medical books cannot be ascertained with certainty. In the first chapter I have endeavoured to discuss briefly their approximate ages. But as I have compared the surgical instruments of the ancient Hindus with those of the Greeks, Romans and Arabs, a concise summary of the chronological dates of the Graeco-Roman, Arab, and the later authors would be a great help in the proper elucidation of my text.

<i>Authors.</i>	<i>Date.</i>
Pythagoras	... 580-504 B.C
Megasthenes	.. 300 B.C.
Ktesias	.. 400 B.C
Hippocrates	460 B.C
Hero of Alexandria	285-222 B.C

<i>Authors.</i>	<i>Date.</i>
Dioscorides	First century A.D.
Celsus	25-30 B.C. to 45-50 A.D.
Sebouenius Largus ..	45 A.D.
Soranus	First century A.D.
Rufus of Ephesus ..	98-117 A.D.
Galen	131-201 A.D.
Marcellus Empiricus	300 A.D.
Antyllus	3rd century, A.D.
Oribasius	326-403 A.D.
Theodore Priscianus	4th century A.D.
Caelius Aurelianus.	4th or 5th century A.D.
Moschion	5th century A.D.
Actius	5th century A.D.
Alexendar of Tralles	525-603 A.D.
Paulus Aegineta	660 A.D.
Serapion	800 A.D.
Rhazes	850-932 A.D.
Haly Abbas	After 950 A.D.
Avicenna	980-1037 A.D.
Abul Cassim	... x 1106 A.D.
Avenzoar	x 1162 A.D.
Paré	1509-90 A.D.
Scultetus	1650 A.D.
Heister	1739 A.D.

I can not suffer this work to go forth without offering at least an explanation of, if not an apology for, the delay which has occurred in the publication of this thesis. It is really due to the accidental fire which reduced the types and the blocks

for this work to ashes and destroyed a part of the manuscript. This portion had to be written again. Again the task of reading proof sheets was laid on me entirely. The occupation of a laborious profession encroached on my time; and I was not fortunate enough to secure the co-operation of any worker in this field of research. The result might be anticipated and no one is more conscious of the unsatisfactory issue than myself. I had no experience in proof reading, and so mistakes are not uncommon. Some of the errors will be found corrected in the corrigenda. As regards the corrections of many of the proof sheets of the Sanskrit foot-notes I was assisted by my son Hirendranāth Mukhopādhāya, who helped me much in getting this book completed. The author will feel obliged if informed of any errors that may be detected and of references to informations which ought to have been given, and also for any hints that may make a future edition more useful to the readers. But I have this consolation in my mind that I have not pushed this work through the press hurriedly or pell-mell and I have done my best. I have laboured with the usual drawbacks of an active professional life and if this be admitted by the critic as an excuse for errors and failures, I shall be grateful to him.

A copious index has been provided for this work, whereby anything material in the whole book may be readily found out, of which it may be said that it wants no other advantages than such as the author had not power to give.

It would not be out of place here to mention that part of this essay was read before the Asiatic Society of Bengal in June, July and August 1908. The learned President in his annual address worked as follows. In the course of the last

session Dr. Girindranath Mukerjee submitted to the society a paper of considerable extent, in which he elaborately examined the subject of the surgical instruments of the ancient Hindus. The questions he has raised, as to the priority of Hindu medicine over that of the Greeks, the Romans and the Arabs, are likely to arouse controversy, but in whatever way the question of priority may be decided, it seems to me truly remarkable that the descriptions given in our most ancient books on medicine, of the surgical Instruments then in use, should bear a close resemblance to the descriptions given not only in Greek, Roman and Arab medical writings but in many cases with the descriptions given in modern works on surgery. I trust that this subject, so peculiarly Indian, will not be left alone and will receive the attention from investigators which it undoubtedly deserves":

As regards the transliteration of Sanskrit words, we have employed the method adopted in the Congress of Orientalists and circulated in the Journal of the Royal Asiatic Society, ignoring in fact, the unpleasant characters of the Sacred Book of the East.

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<sup>1</sup> Journal and Proceedings of the Asiatic Society of Bengal, Vol V, 1909, Annual Address, p XXX.

## I

## SANSKRIT AND ALLIED ALPHABETS.

अ . . . . a	ओ . . . . o	ट . . . . t	ब . . . . b
आ . . . . ā	औ . . . . au	ठ . . . . th	भ . . . . bh
इ . . . . i	का . . . . k	ड . . . . d	म . . . . m
ई . . . . ī	खा . . . . kh	ढ . . . . dh	य . . . . y
उ . . . . u	गा . . . . g	ण . . . . n	र . . . . r
ऊ . . . . ū	ঘা . . . . gh	ত . . . . t	ল . . . . l
ঝ . . . . ?	ঙ্গ . . . . n	ঢ . . . . th	ব . . . . v
ঝু . . . . ?	ঞ্চ . . . . c	ঢ . . . . d	শ . . . . ś
ঞ . . . . l	ঞ্ছ . . . . ch	ঢ . . . . dh	ষ . . . . s
ঞু . . . . l	ঞ্জ . . . . j	ঞ . . . . n	স . . . . s
ঞ . . . . e	ঞ্জ . . . . jh	ঞ . . . . p	হ . . . . h
ঞে . . . . ai	ঞ্জ . . . . ñ	ঞ . . . . ph	ঞ . . . . l

\* (*Anusvara*) . . . m | s (*Avagraha*) . . . \*

\* (*Anunāsika*) . . . m | *Udātta* . . . . . . . . . . . .

: (*Visarga*) . . . . h | *Svarita* . . . . . . . . . . . .

× (*Jihvāmūlīya*) . . h | *Amudātta* . . . . . . . . . .

× (*Upadharmanīy*) h

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Klaññeamukha or Curlew forceps Bhrngarajamukha or Butcher-bird forceps. Añjalikainā forceps. Arzbhāñjanamukha forceps Nandimukha forceps II The Sandaiñśa or Pincher-like forceps. Forceps with and without handles. Forceps with Smooth and rough ends Epilation forceps Mucutī or Mucundi Vāñśabidala or Bamboo forceps. III Tāla-Yantra or Picklock-like instrument Ectāla and Dvitāla The Ear-scoop IV The Nañi-Yantra or Tubular instruments Kāntaśalyāvalokini or Throat speculum Pañcamuka and Trimukha. Tubular instruments for inspection of arrows. Śalyaniighātāni The Impellant. Tubular instruments for Piles—for inspection and medication. Samū. The Rectal Speculum Caloptei Tubular instruments for the Fistula-in-ano Tubular instruments for the nose Nasal Speculum Nathu-karani and Yamaka-nathu-karani Nasal tubes. The Añguli-trānaka or Finger-guard. Yoni-Vranekṣada or Vaginal Speculum Dioptei. Bivalve Speculum. The tubular instruments for wounds—Vrana-vasti or Wound-Syringe Tubular instrument for ascites Dākodara yantra or Canula Tubular instruments for Hydrocele. Tubular instruments for rectal stricture. Tubular instruments for injection into the rectum—Vasti Yantra or Rectal clyster. Uttaravasti or urethral, vaginal and uterine tubes. Catheters. Tubular instruments for inhalation and fumigation Disinfection of rooms, clothes &c. Tubular instruments for cupping Srunga or horn. Alābī Yantra or gourd Ghat Yantra. V Salaka

or rods Earthworm probes Arrow probe Snake's hood probe Fish-hook probes. The Šaikus; Swab probe Spathomele or spatula probe Spoon-shaped probes Cyathiscomele Nail-shaped probes Jāmvavauṣṭha probe. Gamma-shaped probe and the aṅkuṣṭha cautery. Collyrium probes Karṇa Śodhana or Ear-cleaner. Garbha-Śauku or Fetus or Traction hook Yujña-Śauku or Midwifery forceps Sarpa-faṇa or snake's hood-like rods Stone extractor. Hippocratic oath Sarapuṇḍikha-mukha Probe Arddhacandramukha or Half-moon Probe. Bone Lever. Director Urethral Probe VI. The Upayantra or Accessory Instruments Raju or thread, Venikā or twine; Pattā or Bandages, Abdominal binder, Field Hospital, Dressings Carnia or leather . leather bandage, leather ligatures. Yantra-Šaṭaka or Lithotomy Strap or binding apparatus, Pāśa Leather bags Śirovasti or leather-bag for the head Leather Band. Leather Bottles, Jars, etc Antarvalkala or Banks The crutches, Tendrils of creepers or Latā Vastra or cloth Asthikāśma or stone. Mudgaia or Hammer. Pāmpadatala or hand and foot Anguli or fingers Jihvā or tongue. Danta or tooth Nakha or nails Mukha or mouth Vāla or hair Probang. Suture in material Aśvakataka or the ring of a horse's bridle. Śākhā or branch of a tree Sthivana or spittle Pravāhana or fluxing the patient. Hāra or Happiness Ayaskānta or Load-stone. Kāra or Caustics or Potential cautery Agni or Aetral cautery Bhavaṇa or medicines Goats g t Arrest of hemorrhage

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159	line 13	...	"	Cīna	" China
178	item 10	"	2	Obstetric	" Obstetrie
181	"	"	"	Gayadāṣṭa	" Gayadāṣṭa.
196	line 12	"	"	Sesamum	" Sesum
219	" 14	"	"	effectual	" effectual
219	" 21	"	"	Pācana	" Pāchana
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262	" 10	"	"	Hippo	" Hippo
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328	" 3	"	"	Jolly	" Jolley.
331	line 18	"	"	Physorian	" Physician
340	" 5	"	"	amber	" ambar
310	" 18	"	"	Patimaha	" Patimoba
318	" 2	"	"	Furoz	" Frioz.
352	" 22	"	"	Areeci	" Arecha
354	" 11	"	"	Dvārusita	" Dvarusiti
355	" 12	"	"		

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## **WORKS BY THE AUTHOR.**

1. Muscles of the Human Body, arranged in Tabular forms.  
Fourth Edition. Re. 1
  2. Tropical Abscess of the Liver  
Thesis approved for the degree of Doctorate in Medicine,  
Madras University Rs. 5
  3. Glossary of Indigenous Medicinal Plants.  
(In the Press)
  4. Notices, Biographical and Bibliographical, of the Indian  
Physicians and their Works on Medicine.  
(In the Press)
  5. Medicine in the Vedic times.  
(In preparation)
- 

**THE STAR MEDICAL HALL,**  
**80, Russa Road North, Bhawanipur,**  
**CALCUTTA.**

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THE  
Surgical Instruments of the Hindus.

CHAPTER I

INTRODUCTION.

ANCIENT MEDICAL AUTHORS AND THEIR WORKS.

The Science and Art of Medicine, like many other different branches of learning originated with the Hindus. They consider the art of healing as an Upaveda and it is generally known as Āyurveda, that is the art of prolonging life. Like the Vedas, they trace the origin of the science to God, the fountain of all true knowledge. Bramhā transmitted this heaven-born science to this world for benefit of the mortals in one of the sacred writings, the Āyurveda.

It was composed as a sub-division of the Atharva Veda and consisted originally of a *lakh slokas* or a hundred thousand stanzas, divided into a thousand chapters. Then considering the short span of life and inadequate intelligence of man, he divided the book into eight parts<sup>1</sup> as follows —

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<sup>1</sup> तदथा ॥ श्रव्यं शास्त्राक्षरं कायचिकित्सा भृतविद्या कौमारस्त्वमगदतन्त्रम् रसायनशब्दं वाजीकरणतन्त्रमिति ॥

Suśruta Samhitā, I. 1.

कायचिकित्सा शास्त्राक्षरं शन्यहर्तुकं विषगरवैरीषिकप्रशमनं भृतविद्या कौमारस्त्वकं रसायनानि वाजीकरणमिति ।

Caraka Samhitā, I xxv

वेदो स्त्रायर्ब्ल्यं खन्दः यनवलिमङ्गलहीमनियमप्रायचित्तोपचासमद्वादिपरिशङ्खात् चिकित्सा प्राप्त

Ibd.

1. Śalya Tantra or Major Surgery
2. Śalākya Tantra or Surgery of parts above the Clavicles.
3. Kāya Cikitsā or Inner Medicine.
4. Bhūtvidyā or Demnology
5. Kaumāraabhrtya or the Science of Pediatrics.
6. Agada or Toxicology.
7. Rasāyana or Treatment to prolong life.
8. Vājikarana or Treatment to stimulate the sexual power.

The book is no more available now, Suśruta being the authority for the above information<sup>1</sup>

A different view is held by others, who trace the origin of Hindu Medicine in the verses of the Rgveda<sup>2</sup>

<sup>1</sup> इह स्त्रायुर्वेदी नाम यदुपाङ्गमर्थर्थवेदस्प्रान्तार्ग्रेव प्रजा; श्रीकशतसहस्र-  
मध्याधसहस्रच त्रिवान् स्यमूः। ततीत्यायुहमस्यमेष्ट्वाच्चावलोक्य नराणा भूयीऽध्या-  
प्रष्टीतवान्॥

Suśruta Saṁhitā, I. 1.

तत्र चेत् प्रष्टार स्याः चतुर्शास्त्वकसामयगुरुरथर्वेदानां क वेदमुपदिशन्त्यायुर्वेदविदः ।  
किञ्चादुःक्षमायुर्वेदः किञ्चायमायुर्वेदः शाश्वतोऽशाश्वत इति । कानि चास्प्राज्ञानि  
कथायसंवित्त्वा; किमर्थवेति ॥

मत्र भिषजा एषेनैव चतुर्शास्त्वकसामयज्ञुरथर्वेदानाम् आत्मनीऽर्थवेदे भक्तिरादेश्या ।

Caraka Saṁhitā, I. xxx

The origin of medical science, as quoted in the above passage of Caraka, does not however agree with the view expressed by the author in the Sūtra Sthāna, Ch. I (See footnote I. P 4) In Ch. XXX, we find that an attempt had been made to make a compromise between the two views of Agnivesa and Suśruta. Evidently this was the work of a later redactor, possibly Drdhavala

न त्यायुर्वेदस्प्राज्ञवित्त्वपत्त्वाभ्यते । अन्यचावबोधीपदेश्याद्भेदतद्वै हयमधिकात्य उत्तिः-  
मुपदिशन्त्वेके स्माभाविकव्यासम् लचयसमिक्तात्य यदुक्तम् इह चायेचाभ्याये \* \* \* ॥

Caraka Saṁhitā, I. xxx

<sup>2</sup> स्त्र्येदयायुर्वेद उपनीद

### ATHARVA VEDA.

"On examining the contents of the Atharva Veda more in detail, we find that the hostile charms it contains are directed largely against various diseases or the demons which are supposed to cause them. There are spells to cure fever (takmān), leprosy, jaundice, dropsy, scrofula, cough, ophthalmia, baldness, lack of vital power, fractures and wounds; the bite of snakes or injurious insects, and poison in general; mania and other ailments. These charms are accompanied by the employment of appropriate herbs. Hence the Atharva Veda is the oldest literary monument of Indian Medicine"<sup>1</sup>. This Veda can not belong to a period later than 1000 B.C., but possibly earlier<sup>2</sup>. It exists in the recensions of two different schools. That of the Paippalāda is only known in manuscript, discovered by Prof. Buhler in Kashmir and described by Prof. Roth in his tract *Der Atharva Vēda in Kaschmir* (1875). The printed text, edited by Roth and Whitney in Berlin 1856, gives the recension of the Śauṇaka School.<sup>3</sup> It has been translated into English Prose by Whitney, 2 Vols., into English verse by Griffith, 2 Vols., Benares, 1897, and with the omission of the unimportant

<sup>1</sup> McDonnel's Sanskrit Literature, P. 196

अथवैदस्य \* \* \* \* चतुर्थ वैदलेऽपि प्रायेणाभिचारव्यर्थताद्यज्ञविद्यायामनुप-  
योगात्मानिर्देशः। तथाहि चतुर्वेदेनैव हृष्टं कुर्वन् यज्ञुर्वेदेनाध्यथेव सामवेद्नौहात्रं  
यदेव चैव विद्याय सूक्तन्तेन ब्रज्ञात्मभित्तिश्चुते स्त्रीयोसम्यायत्वं यज्ञानां ज्ञायते।

Kallūka Bhatṭa's Commentary on Manu Samhitā, Ch III, Sloka I.

<sup>2</sup> On the date of Atharva Veda, see pp CXL—CLXII, Prof. Lanman's Edition of Whitney's Transl., Prof. McDonnel's Sanskrit Literature, pp. 185—201

<sup>3</sup> I ex Ver. cum n the Journal of the Am. Or Soc. Vol. XII

hymns, by Bloomfield<sup>1</sup> into English Prose, with notes, in Vol. XLIII of the Sacred Books of the East.

### CARAKA SAMHITA

In the Caraka Samhitā we find that Brahmā taught Dakṣa the science of medicine, Dakṣa became the preceptor of the Aśvin twins, they in their turn became the teachers of India and Indra imparted this knowledge to Bharadvāja who was sent by a conclave of sages to learn the art for the welfare of the human race<sup>2</sup>. Bharadvāja had Punarvasu Ātreya and the others as disciples. Ātreya's students were Agniveśa, Bhela Jatakarṇa, Pañcātra, Hārīta and Kṣārapāni, all of whom became celebrated as the authors of treatises on Medicine; the Caraka Samhitā being a revised and improved edition, of the treatise of Agniveśa, which was declared to be the best production. Caraka did not, however, redact the whole

<sup>1</sup> He has also edited the Kauśika Sātra of the Atharva Veda, with extracts from the commentaries of Dārīta and Keśava (see Vol. XIV Journ. Am. Orient. Soc.). It is very useful as a help to the proper understanding of the meaning of a hymn.

<sup>2</sup> दीर्घजीवितसखि चक्रं भरदाऽज उपागमत् ।  
इन्द्रमुयतपः बुद्धा शरण्यमस्मैभवरम् ॥  
ब्रह्मणा हि यथा प्रीक्तमायुर्वदं प्रजापतिः ।  
जशाह निखिलेनादावधिविनो तु पुनरूतः ॥  
अधिनभ्या भगवान् श्रुतं प्रतिपेदे ह वीवलम् ।  
चक्रप्रियोक्तो भरदाऽजस्त्राचक्रमुपागमत् ॥

<sup>3</sup> अथ मैत्रीपरं पुण्यमायुर्वदं पुनर्बसुः ।  
शिष्येभ्यो दत्तवान् शडभ्यः सर्वभूतानुकम्पया ॥  
अग्निर्विज्ञय भैलैषं अनुकर्णीः पराग्नरः ।  
क्षारीतः क्षारपाणिश जग्टहस्तमैर्वदः ॥  
बुडोर्वैष्वस्त्रामीद्वैपदेश्याकारं सुनेत्रः ।  
तत्त्वस्य कर्त्त्वं प्रथममप्रिवेशी शतोऽभवत् ॥  
अथ भिन्नाद्यवश्यकु च च वस्त्रं हतानि च ।  
आवश्यमानुग्रहेयं सर्वसङ्गं मुमेधम् ॥

book;—the last forty-four chapters<sup>1</sup> were edited by Drdhabala,<sup>2</sup> a native of Panchanadapura, long supposed to refer to Punjab (the land of five rivers) but at present identified with a town in Kashmir by Dr. Hoernle.<sup>3</sup> Two other works, the treatises of Bhela and Hārita, are still extant, the former existing in manuscript in the Tanjore Library<sup>4</sup> and the latter as printed texts by *Kavirājaes* K. C. Sen and B. L. Sen, of Calcutta.<sup>5</sup>

Now as regards the age of Caraka, there is great divergence of opinions. The Indians generally believe him to be a Rsi of great antiquity while the European scholars try

<sup>1</sup> For a discussion on the part added by Drdhavala, see Hoernle's Studies in Ancient Indian Medicine, J. R. A. S. 1908, p. 997-1002. Also see pp. 11-15 in the *Vanausadhi Darpana*, Vol. I., by *Kavirāja Birajā Charan Gupta*, 1908.

अतस्त्वीकृतमिदं चरकेणात्मितुद्विना !  
सस्कृतं तत् तु सस्तरं विभागेनीपलत्यते ॥  
इदमन्यूनप्रदार्थं तत्त्वं दोषविवर्जितं ।  
अखण्डार्थं दृढवली जातः पञ्चनदे पूरे ॥  
क्षत्वा वहन्यस्तन्मी विशेषाच्च वलीच्चयम् ।  
सप्तदशोषधाव्यायसिद्धिकल्पैपूरयत् ॥

Caraka Samhitā, VIII, xii.

अमिन् सप्तदशाव्याया, वात्पाः सिद्धय एव च ।  
नासाद्यन्तेऽग्रिवेशभ्य तत्त्वे चरकसंख्यते ॥  
तानेतान् कापिलबलः शेषान् दृढवलोऽकरीत् ।  
तत्क्षयाम्य महार्थस्य पूरणार्थं यथातयम् ॥

Ibid, VI, xxv

<sup>2</sup> Hoernle's Studies in the Medicine of Ancient India, Part I, Osteology, Introduction, p. 2. See also his article on "The authorship of Caraka Samhitā" in the *Archiv für die Geschichte der Medizin*, 1907.

<sup>3</sup> See Burnell's Tanjore Catalogue No. 10773 of Sanskrit MSS., p. 63.

<sup>4</sup> It is doubtful whether the Hārita Samhitā is the genuine work of the Rsi Hārita. The printed text refers to Caraka Suśruta and even Vāgbhaṭa, who were less likely posterior to Hārita. See the Foot-note 3 P. 8.

to connect him with historical events of more modern times. Sylvain Lévi has recently discovered in the Chinese Translation of the Buddhist *Tripitaka* that Caraka was the Court Physician of the Indo-Scythian King Kanis̄ka, in the first century A.D.<sup>1</sup> But the following objections are to be met with before his conclusions can be accepted as proved —

1. The age of Kanis̄ka is not yet settled, the probable limits of his reign being from the first century B.C. to the second century A.D.<sup>2</sup> Moreover in the Buddhist *Tripitaka* referred to, the name of Caraka is simply mentioned as the Court Physician of the King Kanis̄ka but there is nothing to identify him with the author of the book. The same name, found in different places, does by no means signify the same person.

2. The time assigned to Caraka by the Indian medical tradition is of great antiquity. With regard to the chronological position of the three old authors, he is mentioned as anterior to Suśruta and Vāgbhaṭa I.<sup>3</sup>

3. Dr. Rāy has pointed out that the name Caraka is patronymic in the Veda.<sup>4</sup> It is quite possible that a much

<sup>1</sup> See Journal Asiatique—July to December 1896, p 444 to 484 and January to June 1897, p 5 to 42, also Indian Antiquary Vol XXXII, 1903, p 382 and Vienna Oriental Journal, Vol XI, p 164

<sup>2</sup> See V. A. Smith's Early History of India, P. 225-26

Dr. Fleet in J. R. A. S., 1906, P. 979

Dr. Bhandarkar in J. R. A. S. (Bombay Branch), Vol. XX, P. 269

J. A. S. B. Vol XXXIX, 1870, p 65 and 126

<sup>3</sup> चरकः सुशुत्तैव वाग्भटच्च तथापरः ।  
सुख्याच्च स हिता वाच्यामित्य एव शुर्गं शुर्गे ॥  
अत्रिः कलयुगे दैवी द्वापरे सुशुती मतः ।  
कलौ वाग्भटनामा च गरिमात्रं प्रदृश्यते ।

Hārīta Samhitā, Parāśāṭādhāya.

<sup>4</sup> Dr. P. C. Ray's History of Hindu Chemistry Introduction P. X.

Later namesake of his, is referred to by the *Tripiṭaka*, just as we know that more than one Vāgbhaṭa appeared as successful physician. Again we have evidence that eminent physicians in later times were called Caraka by way of a compliment and so Vāgbhaṭa was called Caraka of Sindh or Sindhicara.

4. Pāṇini wrote special Sūtras for the Agniveśas and the Carakas.<sup>1</sup> These names must have been famous before Pāṇini's time, otherwise he would not have written special Sūtras for them. Prof. Goldstucker has conclusively proved that Pāṇini could not have flourished later than the sixth century B. C<sup>2</sup>

5. Patañjali wrote a commentary on Caraka<sup>3</sup>. He flourished during the second century B. C. Both Cakrapāṇi-datta and Bhoja allude to him as the redactor of Caraka Saṅhitā<sup>4</sup>. So Caraka must have flourished long before him, for unless his work was regarded as a standard work of authority, Patañjali would not have taken so much pains to write notes on the book, and still more for issuing a redaction.

6. The internal evidence of the book itself speaks against such an assumption. There is no salutation to any deity at the

<sup>1</sup> कटचरकाल्पूक् । Pāṇini I. 3 107.

गग्निदिव्यी यत्र ॥ Ibid, 4 I 103

गग्ने वन्स । \* \* \* \* अग्निवेश \* \* \* \* पराशर । जसुकर्ण । \* \* \* .

<sup>2</sup> Goldstucker's Pāṇini; and Journal of the Asiatic Society of Bengal, Vol. XLII, P. 254.

<sup>3</sup> आहीनाम अतुभवेन वस्तुतत्त्वस्य कात्सेन निश्चयवान्, रागादिवशास्त्रपि नान्यथावादी यः स इति चरके पतञ्जलि ।

Quoted in Laghumasījuṣṭa of Nāgeśa Bhatta (Rāya).

<sup>4</sup> पातञ्जल—महाभाष्य—चरकप्रतिमस्फृतैः ।

मनीवाक-कायदीषाणाम् हर्षेऽहिपतये नम ॥

The salutation in the Āyurvedārthadipikā.

beginning of the book,—a custom invariably found to be observed in the more modern compilations. There is complete absence of Pañcarātic theology in the Caraka Saṃhitā, nor is there any reference to Śākyā Muni and his religion. Kanis̄ka was a great patron of Buddhism, and it might naturally be expected from the Court Physician of the king to describe the charitable hospitals which we know from the edict of Aśoka, to have flourished in every quarter of India. On the contrary we find descriptions of a hospital as reserved for rich men only at their own houses. Those gods and goddesses that figure so prominently in the Purāṇas were unknown during his time.<sup>1</sup> Beef was not then, apparently, a

<sup>1</sup> No doubt the names of Laxmi, Kṛṣṇa and Vāsudeva occur in Cikitsita Sthānam, Chapter XXV, but it should be remembered that they occur in the Supplement added by Drdhavala in later times.

सर्वयहा न तत्र प्रभवन्ति न चाग्निश्वन्तृपचौरा ।  
 लुच्मीश्च तत्र भजने यत्र सहाग्नभव्यस्ति ॥  
 पितृमाण इमच्चाद सिङ्हं मन्त्रमूदीरयेत् ।  
 सम भासा जया नास विजयो नाम से पिता ॥  
 सोऽहं जयो जयापुत्रो विजयोऽय जयानि च ।  
 नमः पुरुषसिंहाय विष्णवे विष्वकर्मणे ॥  
 सनातनाय कृष्णाय भवाय विभवाय च ।  
 तेजी ब्रह्माकपे सान्नान् तेजी ब्रह्मेन्द्र्योर्थमे ॥  
 यवाह नाभिजानामि वासुदेवपराजयम् ।

Caraka Saṃhitā, VI, xxv.

But Kṛṣṇa and Vāsudeva are mentioned in Pāṇini as demigods, having many adherents who formed a class. ‘‘वासुदेवार्जनादा बुन’’ Pāṇini, 4, 3, 98. Again the passage may be an interpolation of a subsequent Vaiṣṇava Vaidika.

So Br̄haspatihvaja is also mentioned in Drdhavala’s Supplement, as a god to be worshipped during the preparation of some medicines.

ब्रह्माधीषश्चहपटहमिरीनिदैः सिङ्हः सितच्छवदक्ततच्छायां गजस्तम्भमारीपयेहगवन्त  
 हष्टव्यजमभिपूज्य त स्त्रीह दिभागमाचिकमङ्गलाज्ञीः लुति इवता च नैवेस्ति गमयेत् ॥

forbidden food, for it is spoken of as an article of diet that should not be indulged daily,<sup>1</sup> nor should it be used in excessive quantity as it is mentioned as a cause of the disease, Vāta-Rakta.<sup>2</sup>

The style of the book is antiquated and decidedly savours that of the Brāhmaṇas. Nāya and Vaiśeṣikī systems occur in the text,<sup>3</sup> and so probably the book was written long before the compilation of these Sūtras.

*Editions*—The book had undergone several editions. It was edited by Jibānanda Vidyāsāgar, Calcutta, in 1877 and 1896 (2nd Ed.), by Gaṅgādhar Kaviratna, Berhampur, 1879, by Gupta, Calcutta, 1897, with commentary by Cakrapāṇidatta, Calcutta, 1892-93, by Jaśodānandana Sarkar, with Bengali translation, 1894.

*Translations*—It had been translated into English by A. C. Kaviratna, Calcutta, 1897. Caraka was translated from Sanskrit

And we find that the antidote to poison called महागन्धहस्ती is said to have been told by Tryambaka (Śiva) to Baśīlavanna (Kuvera).

अगर्दीय वैश्रवणार्थ्यातन्त्रस्वकेण षट्प्रङ्गः।

Caraka Samhitā, VI xxv.

Also we find the name of Kārttukeya mentioned in Sec IV ch viii.

प्रसूत लभविक्षिष्टमविक्षिष्टा शभान्वने,  
कार्त्तिकैयथुतिं पुच्चं कार्त्तिकैयाभिरञ्जितमिति ॥

<sup>1</sup> कुचिंकाश किलाठांश शौकर गद्यभानिष ।

सत्कान् दधि च साधाश यावकाश न शौलदैत् ॥

Ibid. I v.

<sup>2</sup> कुसल्यभाषनिष्पावशकादिप्रलतेत्युभिः ।

दध्यारनालभैवीरयुक्ताक्ष्युरामवैः ॥

Ibid. VI

\* Vide Caraka, III

into Arabic in the beginning of the eighth century and his name "Sharaka Indianus" occurs in the Latin translations of Avicenna, Rhazes and Serapion. "A translation of the Karaka<sup>1</sup> from Sanskrit into Persian and from Persian into Arabic is mentioned in the Führst, (Finished 987 A.D.). It is likewise mentioned by Albérūnī<sup>2</sup>, the translation is said to have been made for the Barmekides.<sup>3</sup> Albérūnī's chief source on Medicine was "Caraka, in the Arabic Edition of Ali Ibn Zain, from Trabaristan."<sup>4</sup>

#### *Commentaries.—*

1. Patañjali—2nd century B.C.—not available
2. Cakrapāṇidatta's Caraka Tattparya Tīkā, or Āyurveda-dīpikā<sup>5</sup>—1060 A.D.
3. Haricandra<sup>6</sup>—1111 A.D.—not available.
4. Śibadāsa's Caraka-Tattva-Pradipikā
5. Gaṅgādhara's Jalpa-Kalpa-Taru—1879 A.D.

<sup>1</sup> Proceedings of the As. Soc., Bengal, 1870, September

<sup>2</sup> Reinaud, *Mémoire sur l'Inde*, P. 316

<sup>3</sup> Maxmuller's Science of Language, Vol. I., P. 168, Foot Note.

<sup>4</sup> Sachau's preface to India, P. XL.

<sup>5</sup> See Caraka Saṁhitā with Cakrapāṇidatta's Commentary by Kavirāja Harināth Viśārada, Calcutta, 1895.

<sup>6</sup> A Commentary written by Haricandra is referred to in the Sanskrit Slokas narrating the genealogy of Mābeśvara, the author of Viśvaprakūṣha and Saḥasāṅkacarita, who flourished during the reign of Saḥasāṅka, king of Gāzipur in 1033 Saka (1111 A.D. Wilson).

श्रीकाहसाङ्गपतेरणवद्विद्-

वैद्योक्तरङ्ग पदपञ्चिमेव विभृत्।

यश्चन्द्रचारुचरितो हरिचन्द्रनामा।

सद्ग्राम्यस चरकतन्त्रभर्तुचकार ॥

## SUŚRUTA SAMĀHITĀ.

The next treatise on Hindu Medicine is the Suśruta Samāhitā. Suśruta was the son of the sage Viśvāmitra,<sup>1</sup> a contemporary of Rāma. He learned the Science of Medicine from Divodāsa, surnamed Dhanvantari, king of Benares, at his Himalayan retreat. According to Suśruta, Divodāsa was the incarnation of Dhanvantari, the celebrated physician of the gods in heaven, and he first propounded the Art of Healing in this world.<sup>2</sup> Suśruta represented the Surgical School while Caraka was pre-eminently a Physician in practice.

As regards the authorship of the book, opinions differ. To Suśruta, Dhanvantari addressed his lectures on Major Surgery,<sup>3</sup>

<sup>1</sup> Mahābhārata, Anuśāṣana Parva, Ch 139, Vs. 8-11.

धन्वन्तरिर्घर्षमृद्धां वरिष्ठो वाचिवशारदः ।

विद्वाभिवाक्मजस्त्रि शिष्य सुश्रुतस्तथात् ॥

Suśruta Samāhitā, V. ii.

अटाङ्गयन्वेदिविद दिशोदासं महामति ।

किञ्चन्नाम्नार्थसन्देहं सूच्चमागादभिवोदविं ।

विद्वाभिवस्तुः श्रीमाल् तुश्रुत परिपूर्वक्ति ।

Ibid, VI. lxvi.

सर्वशास्त्रार्थतस्त्र त्वपीद्विष्टि कुदारघी ।

वैश्वाभिव शशास्त्रार्थ शिष्य काशिपतिर्मुनिः ॥

Ibid, VI. xxviii.

<sup>2</sup> अथ खलु भगवन्ममरवरस्त्रिपिण्यपरिडत्तमाश्रमस्ये काशिराज दिशोदासं धन्वन्तरि-  
मोपर्धनवैतरणीरस्योक्तालावतकर्त्तव्योर्योपिरुचितसुश्रुतप्रश्नतय उच्चः ।

Ibid, I. i.

<sup>3</sup> अत्र कद्मे किमुच्चातामिति । त ऊच्चः । अस्माक सर्वेषामेव शत्रुज्ञानमूलं  
क्षत्त्वोपदिश्वत् भगवानिति । स उच्चाचैवमस्त्विति । ... अस्माकमेवमतीना अतमभिसमीक्षा  
सुश्रुती भगवत्त प्रत्यति ।

Ibid L

which he reproduced in this work. But in the opening lines of the book, salutation is offered to Brahma, Daksa, Asvins Indra, Dhanvantari, Suśruta and others<sup>1</sup>. This shows that Suśruta can not be the author of the work or at least of the work in its present shape, for no author can offer salutation to himself. By "the others" are no doubt meant the notable surgeons who practised and taught the Science of Surgery and who were either contemporary with or posterior to Suśruta. Possibly the original Suśruta Saṃhitā had been recast and the redactor could appropriately offer a salutation to the original author and to other surgeons who flourished before him. There is also an Indian medical tradition, noted in Dallanacārya's Commentary, which assigns the improved and supplemented edition of Suśruta's original work to Nāgārjūna,<sup>2</sup> the celebrated Buddhist Chemist, who is said to have been a contemporary of the king Śatvāhana.<sup>3</sup>

In the third chapter, Suśruta enumerates the subjects described by him,—the chapter forming an index of the book. Therein he mentions the five principal divisions of his book and says that the Uttara Tantra or the Supplement would be

<sup>1</sup> नमो ब्रह्मप्रजापत्यश्ववलभिज्ञवलरिसुश्रुतप्रसृतिभ्यः ।

Suśruta Saṃhitā, I

<sup>2</sup> यव यत् परोचे नियोगस्त्र तदैव प्रतिसंकर्त्तुं सूदं ज्ञातव्यमिति । प्रतिसंकर्त्ता पीड  
नाशार्थीन् एव :

Dallana's Commentary to Saśruta, I 1.

See also Dr. Cordier's Recentes Découvertes, pp 12-13.

<sup>3</sup> See Hārsacarita by Vāgā.

Beal's *Buddhist Records of the Western World*, Vol II , P. 209, 212, 216,  
Burgess' Archaeological Survey of S. India.

Introd. a hist. of u Budh. In P 318.

described afterwards.<sup>1</sup> Now the fact that the sixth part was appended to the work as a Supplement or Uttara Tantra (*i.e.*, after treatise) clearly shows that it was written afterwards by another surgeon and added to the original treatise. If the original Suśruta wished to have six divisions of his book, he would have mentioned it clearly in the index and would not have, after stating that his book consisted of five parts, added that "the Supplement would be described afterwards,"<sup>2</sup> which seems to be an interpolation of the Supplementor to pass his edition as the original work of the author. Again at the end of the fifth section, there is a passage describing the importance of the Āyurveda, which was meant as the conclusion of the book by the author.<sup>3</sup> It is to be noted

<sup>1</sup> प्रामाभिहित सविशेषायश्चत पच्चसु स्थानेषु । तत्र सूतस्थानस्यायाः पट्टचलारिश्त् ।  
बोड्डग्निदाननि । दश शरीराणि । चलारिश्विकित्सानि । अष्टाँ कल्पा । तदुच्चर  
षट्पठिः ।

अध्यायानां शतं विशेषतदुदौरितम् ।

अतःपर स्वान्विव तत्त्वसुचरमुच्यते ॥

Suśruta Saṃhitā, I. m.

<sup>2</sup> वीजं चिकित्सितमैतत्वं समाप्तेन प्रकौर्चितम् ।

सविशेषायश्चतमस्त्रा व्याख्या भविष्यति ॥

तत्र सविशेषायश्चत पच्चसु स्थानेषु । तत्र सूतस्थाननिदानशारीरचिकित्सितकल्पे-  
ष्ठर्यवशात् सविभज्योत्तरे तत्त्वं शेषानर्थान् व्याख्यायास्याम ।

Ibid, I. 1.

<sup>3</sup> सविशेषायश्चतमेतदुक्तं विभागमः ।

इहीहिटाननिहिटानुसर्वात् वक्त्वायथदीतरे ॥

सनातनलिहिटानामचरत्वाच्येव च ॥

तथाहुंहस्फलत्वाच्च हितलादपि देहिना ।

वाक्समूहार्थविक्षारात् पूजितलाच्च देहिभिः ॥

चिकित्सितात्पुण्यतमं न किञ्चिदपि सञ्चुतं ।

ऋपेण्ड्रप्रभावमात्राच्ययीनिसिंघमुरी ॥

घारथिला तु विभलं सतम् परमसन्धत ।

चक्राहार समापारस्त्रैङ्ग मैलं च सोहते ॥

Ibd. V

that at the end of no other sections do we find a similar passage. He also writes "Thus one hundred and twenty chapters are described" but adds "The other diseases shall be described in the *Uttara Tantra*": the latter part no doubt is an interpolation of the Supplementor. Moreover, in the opening lines which serve as a preface to the sixth part, the authority quoted for the diseases of the eye is Nimi, the king Janaka of Mithilā and not Dhanvantari.<sup>1</sup> But in the first chapter of the first section, it is described that the sages wanted Dhanvantari to teach them *Salyatantra* or Major Surgery only and he consented to their request. And this subject he treated in detail in the five sections of the book. In the Supplement, on the other hand, are described the other branches of the science such as Minor Surgery, Inner Medicine, &c. Probably this part was added afterwards to give completeness to the treatise, and the original Suśruta was called *Vṛddhya* or the Old by the commentators to distinguish him from the Supplementor.

Suśruta's work is specially important to us as having two whole chapters (vii and viii of Section I) devoted to the descriptions of Surgical Instruments and one whole chapter (xxv of Section I) to the principles of Surgical Operations.

The age of Suśruta is also involved in obscurity. Nothing can be ascertained from the fact that he was a son of Viśvāmitra<sup>2</sup>,

<sup>1</sup> अव्याधानी शते विरुद्धं यदृक्तमसरन्वया।

वद्यामि वहुधा सन्युक्तरिद्यनिमानिति ॥

इदानीलत् प्रवद्यामि तत्सुक्तरसुक्तम् ।

निष्ठिलेनीपदिश्यन्ते यत्र रोगा पृथग्विषः ॥

शालाक्यशास्त्राभिहिता विदेहाधिपक्वीर्चिता ॥

Suśruta Samitī, VI 1.

<sup>2</sup> Viśvāmitra is the *gotra* name so the complete name may either refer to the great Viśvāmitra or to his descendants.

for the age in which the latter lived is not known to us. But he must have flourished during the Vedic Age as many Vedic Hymns are ascribed to him. In the *Mahābhārata*, Suśruta is mentioned as one of the sons of Viśvāmitra<sup>1</sup> and in the *Suśruta Saṃhitā* the author is often described as his son. The age of the great epic has, with good reasons, been fixed at 1000 B.C. So Suśruta must have flourished much earlier. The latest limit which we can assign to Suśruta is 600 B.C. as "there are indications in the *Satapatha Brāhmaṇa*, a secondary Vedic work, that the author of it was acquainted with the doctrines of Suśruta" as regards the Osteology. "The exact date of that work is not known, but it is with good reason referred to the sixth century B.C." Again in the *Atharva Veda*, in the tenth book, there is a hymn on the creation of man in which the skeleton is described according to Ātreyya and Suśruta.<sup>2</sup> "The large portion of it (Books I to XVIII) indeed admittedly belongs to a much earlier period, possibly as early as about 1000 B.C., and the hymn in question is included in this older portion". This shows that Suśruta could not have flourished later than 1000 B.C.

Again in *Hastī-Āyurveda*, a book on the Treatment of

<sup>1</sup> श्वामायनोऽथ गार्यश्च जावलिसुश्रुतसंधा—

\* \* \* \* \*

विष्वामित्राभ्यजाः सर्वे मुनयी ब्रह्मवादिनः ॥

*Mahābhārata, Anuśāsana Parva, Ch. IV.*

<sup>2</sup> See J.R.A.S., 1906, P. 915, 1907, P. 1

<sup>3</sup> Hoernle's Studies in the Medicine of Ancient India, Part I. Osteology, Introduction P. 9

Elephants by Pālakāpya, we find the Surgical instruments described after the manner of Suśruta. Pālakāpya lived as a Veterinary Surgeon in the Court of Romapāda, King of Aṅga, which had as its capital the famous town of Cāmpā, identified with the modern town of Bhāgalpur. King Romapāda was contemporary with king Daśaratha, the father of Rāma, the hero of Rāmāyana<sup>1</sup>. Here we have a corroborative evidence of the age of Suśruta.

Suśruta is mentioned in the *Vārtikas* of Kātyāyana<sup>2</sup> who flourished during the fourth century B.C.

We have alluded to Nāgārjūna,<sup>3</sup> the Buddhist Chemist, as the redactor of the Suśruta Saṃhitā. He is said to have been a contemporary of king Kaniṣka that is about the first century B.C.

Another revision was undertaken by Candrate, the son of Tisāta, the author of Cikitsā-kalikā. He revised the text which must have fallen then into a state of corruption. The probable date of Candrate is the ninth century A.D.<sup>4</sup>

<sup>1</sup> अथ शृङ्गमाणसा पितरं च यशस्विनम्।  
एतच्छिष्ठेवकाले तु रीमपाद प्रवापदान्।

Rāmāyana, Vālakandam, Ch. IX.

See also Rāmāyana, i, 11, 13-20, Mahābhārat, iii, 110, 10008-9, Bhāgavat, ix, 23, 7-10

<sup>2</sup> सुश्रुतेन प्रीतं सौश्रुतं।

<sup>3</sup> Possibly more than one Nāgārjūna appeared in ancient India as a chemist. Albérini says "He lived nearly a hundred years before our time" (India, I. P. 189) Rājtarāṅgiṇi places him in the 3rd century B.C. (I. Vs. 172-173) The modern scholars are of opinion that the founder of the Mahāyāna system lived in the first century A.D.

There is no doubt of the tradition that Suśruta's work was redacted, for the author could not write such a passage as follows—“The surgical treatises of Aupadhenava, Aurabhra, Suśruta and Pouṣkalāvata from the basis of other treatises on the subject.”<sup>1</sup>

*Commentators.*<sup>2</sup>—

1. Cakrapāṇidatta—Vānumati—1060 A.D.
2. Gayadāsa—{Nyāya Candrikā }—{or Pañjikā }—11th century A.D.
3. Jejjatācāryya
4. Bhāskara.
5. Mādhava.
6. Bramhadēva.
7. Dallanācāryya—Nibandha Saṃgraha—12th century A.D.
8. Ubhalta (Kashmir).

*Editions*—Suśruta Saṃhitā has been edited by Madhusūdan Gupta, Calcutta, 1835, by J. Vidyāsāgar, 3rd Edition, Calcutta, 1889, by A. C. Kaviratna, Calcutta, 1888-95, by Prabhurām Jibananārām, Bombay, 1901; and by Virasvāmī, Madras.

This book has been translated into English in part only by U. C. Datta 1883, A. Chāṭṭopādhyay 1891, Hoernle 1897, Calcutta, in the *Bibliotheca Indica*. It has been translated into Latin by Hessler and into German by Vullurs.

The book was translated into Arabic before the end of the eighth century A.D. It is called “Kitab-Shawshoon-al-Hindi”

१

श्रीपदेनवमौरवं सौभ्युते पौखलावतम् ।

श्रेष्ठाण्णं श्ल्यतन्त्राण्णं भूताग्येतानि निर्दिष्ट् ॥

Suśruta Saṃhitā, I. iv.

\* \* \* \* \* श्रीसहनपालदेवदृपकिवक्षमः श्रीडृष्टः समभूत् । तेभ  
श्रीजैञ्जन्मटं टीकाकारं श्रीगदासभाज्ञारौ च पञ्चाकारौ श्रीमाधवत्रिष्ठा-  
देशादैन्

त्रिप्रते

and also mentioned as "Kitab-i-Susrud" or Book Suśruta by Ibn Abillsaibial. Rhazes often quotes Sarad as an authority in Surgery.<sup>1</sup>

### VĀGBHATA I.

The next author of celebrity and whose work is still extant is Vāgbhaṭa I or Vāgbhaṭa the elder, the author of Aṣṭāṅga Saṃgraha (*i.e.*, Compilation of the Octopartrite Science). In later times, a namesake of his, wrote another work called Aṣṭāṅga Hṛdaya Saṃhitā (or the best Compendium *i.e.*, the Heart of the Octopartrite Science). In the Uttara Sthāna, Vāgbhaṭa the younger distinctly states that his Compendium is based on the Compilation of Vāgbhaṭa the elder<sup>2</sup>.

As regards the age of Vāgbhaṭa the elder, there is the same uncertainty as with his predecessors. We are however sure that he is posterior to Caraka and Suśruta for he refers to these writers by name.<sup>3</sup>

The chronological relation of the three early authors is described in a popular couplet that Ātreya, Suśruta and Vāgbhaṭa were the three great medical authors for the three Yugas—

<sup>1</sup> "His next description is from an author named Sarad, whom he frequently quotes in other parts of his works".

Adam's Commentary on Paulus Aeginetta, VI lxii.

<sup>2</sup> अष्टाङ्गवैद्यकमहीदधिमन्त्रेन योऽष्टाङ्गसंशयहमहामृतराश्रिरात् ।

तथाद्यन्त्यफलमत्यसमुद्यमाणा प्रौत्यर्थेतदुद्दितं प्रयगेव तत्त्वम् ॥

Aṣṭāṅga Hṛdaya Saṃhitā, Uttara Sthāna, Ch XL, v. 82

<sup>3</sup> By name, *e.g.* in Saṃgraha, Bombay ed., Vol. I, P. 246; Vol. II, P. 421. Again quoted from Caraka, *Ibid.*, Vol. I, pp. 20, 93; Vol. II, pp. 212, 213, *et passim* - from Suśruta I, *ibid.*, Vol. I pp. 109 121 177 247 Vol. II p. 303, *et*

the Tretā, Dvāpara and Kali, respectively.<sup>1</sup> They are known as the Vṛddha Trayī or the Old Triad. This medical tradition goes much against the conclusion of Dr. Hoernle that Vāgbhaṭa I must have flourished early in the seventh century A.D. One of the reasons put forward by him is the fact, that "the Buddhist pilgrim I'Tsing, who resided ten years in the Nalandā University (in Bihar) from about 675-686 A.D., states in *Records of Buddhist practices* that the eight arts (i.e., the branches of medicine) formerly existed in eight books but lately a man epitomised them and made them on one bundle (or book)."<sup>2</sup> Professor Jolly understands by it the Suśruta Saṁhitā while Dr. Hoernle points out with more reasons that it refers to Vāgbhaṭa I's work, the Aṣṭāṅga Saṁgraha (i.e., the Compilation of the Octopartrite Science) and rules out Suśruta by the word "lately."<sup>3</sup> But the description that I'Tsing gives of the contents of the book does not warrant any reference to either. Moreover, he has not given any reason why Vāgbhaṭa II's book Aṣṭāṅga Hṛdaya Saṁhitā (the best Compendium of the Octopartrite Science) might not be alluded to by I'Tsing. Dr. Hoernle, however, rules him out by date for "he can not be placed earlier than the eighth century"—an assertion unsupported by any evidence whatsoever. All that he has proved is that "Accordingly it is probable that all these three medical writers (Mādhaba, Dr̥ḍhabala and Vāgbhaṭa II) come in the period from the 7th to the

<sup>1</sup> See foot-note 3, P. 6.

<sup>2</sup> I'Tsing: Records of the Buddhist Religion. Transl. by Professor Takakusu, P. 128.

<sup>3</sup> J. R. A. S., 1907, P. 413.

9th century A.D.<sup>1</sup> at no very great interval from one another," and this proof is based on the age of Vāgbhata I as suggested by I'Tsing's remarks. Thus he has taken for granted what he is required to prove. He has shown that Suśruta is anterior to Vāgbhata I, and Vāgbhata II is posterior to him. But in trying to prove that Vāgbhata I lived in the seventh century he cannot assume that Vāgbhata II lived in the eighth. Another evidence adduced in support of his conclusion is the fact that the non-medical version of the list of bones of the human body as contained in the Law-book of Yājñavalkya presupposes earlier uncorrupted forms of lists of bones both in Caraka and Suśruta, and "the corrupt recension, traditionally handed down, must have come into existence at a later date," that is to say, between the date of Yājñavalkya (350 A.D.) and Vāgbhata I, the latter of whom is proved to have copied from the corrupt recensions of Caraka and Suśruta. Thus the older recensions still existed in the fourth century A.D. and if we add to it the interval of time necessary for the texts to have fallen into a state of corruption, we get the early seventh century A.D. for Vāgbhata I. But we must remember that there is nothing to prevent against the supposition that Vāgbhata I lived before Yājñavalkya. There might have been two recensions of the texts available during Yājñavalkya's time, one corrupted and it might or might not have been the work of Vāgbhata I and another true version which was availed of by the sage Yājñavalkya. And similar events have happened, as has been pointed out by Dr. Hoernle himself, in our own generation Gangādhar's recension of Caraka is a corrupted form of the text,

while the recension given in Jibānanda's edition is the traditional text of Caraka. No critic would I think jump into the conclusion that Gaṅgādhar lived three or four centuries after Jibānanda. Again if it be true, as he contends, that Suśruta was redacted by Vāgbhaṭa I, we could easily imagine that Yājñavalkya copied his list bones from the original Suśruta and not from the redaction of Vāgbhaṭa I. So we see that the age assigned to Vāgbhaṭa I, or the seventh century A.D. can not be accepted as proved. Dr. Hoernle says . "It should, however, be understood that these conclusions regarding the date and authorship of Vāgbhaṭa I, are not put forward as established fact."

Let us recapitulate the objections that can be urged against the conclusion that Vāgbhaṭa I lived in the seventh century A.D.

1. Vāgbhaṭa I is believed by the Indian medical men to have flourished long before the Christian era. By some, he is connected with the court of Yudhiṣṭhīra, but his name is nowhere mentioned in the Mahābhārata. Ātreya, Suśruta and Vāgbhaṭa are described as the Old Triad or Vṛddhya Trayī and they were the authorities for the Tretā, Dvāpara and Kali Yugas, respectively. It is curious to observe that Dr. Hoernle in arguing against the conclusion of Prof. Jolly that Suśruta is meant by I'Tsing, takes advantage of this Indian medical tradition that Suśruta flourished during pre-historic times, but does not mention the same tradition with regard to Vāgbhaṭa I, which goes against his own conclusion. On the other hand the same objection does not apply against Vāgbhaṭa II.

2 The name of Vāgbhaṭa I's book Compendium of the

Octopartrite Science, no doubt, agrees very well with the description of I'Tsing that "lately a man collected them into one bundle." But Vāgbhaṭa II's book "The best Compendium of the Octopartrite Science" is equally suggestive, though Dr. Hoernle says. "it cannot prevail by the side of the more suggestive name of the rival work of Vāgbhaṭa the elder."

3. Again in arguing against Prof Jolly, Dr. Hoernle has attached much importance to the word "lately" by which Suśruta is ruled out by date. Admitting the validity of such reasoning, it does not follow that by the word "lately" I'Tsing meant any contemporary author or any one who preceded him by a short period only. To comprehend the meaning of the sentence we must understand the word "lately" in connection with the word "formerly" used before<sup>1</sup>. Now the sentence "The science of medicine formerly existed in eight books" no doubt refers to the division of Āyurveda into eight parts by Brahmā and to the treatises on the different branches of Medicine by Agnivesa, Suśruta and others. These treatises are believed to be of remote antiquity, and so any later compilation may be spoken of as recent in comparison with the old treatises of unknown ages. Thus the word "lately" may refer either to Vāgbhaṭa I or Vāgbhaṭa II, but the latter author's claim to the honour becomes reasonable considering his decided posteriority to the former and so coming within the limit of the time suggested by the word "lately."

4. Again I'Tsing refers to a book which was recognised as the standard throughout India. This may refer either to

Vāgbhaṭa I or II. But if Vāgbhaṭa I's book occupied such a position at the time of ITsing, it becomes difficult to imagine why Vāgbhaṭa II should write another work principally based on the work of Vāgbhaṭa I after a lapse of a century or so. Moreover, we find at the present time, that Vāgbhaṭa II's book, Aṣṭāṅga Hṛdaya Saṁhitā, has a wider popularity than the book Aṣṭāṅga Samgraha of Vāgbhaṭa I. The former has been printed many times and is widely read by the students,—so much so Vāgbhaṭa is generally known as the author of Aṣṭāṅga Hṛdaya Saṁhitā.

5. Moreover, the Arabian physician Rhazes, who is said to have lived in the ninth century (882 A.D.) in treating of the property of ginger, the common plantain or musa and other drugs, quotes from an Indian writer, whom he calls Sindaxar or Sindicara.<sup>1</sup> Royle says: "But in the article De Allio another Indian author is quoted, whom I have not been able yet to trace out—*Ait Sindifar* (in another place written "*Dixit sindicar*") *indianus valet contra Ventositatem.*" This Sindicara is identified with Vāgbhaṭa II of Sindh who was in his time known as a second Caraka or Cara, the syllable "ka" making no difference, as in words like "bāla" and "bālaka," both meaning a child.<sup>2</sup> We know that the Vāgbhaṭa's Aṣṭāṅga Hṛdaya Saṁhitā was one of the medical works translated by the order of Caliphs in the eighth century.<sup>3</sup>

6. The translations of the Caraka, the Suśruta and the Vāgbhaṭa occur in the Thibetan Tanjur.<sup>4</sup> "George Huth,<sup>5</sup>

<sup>1</sup> Antiquity of Hindu Medicine, Page 35.

<sup>2</sup> History of Aryan Medical Science, P. 196.

<sup>3</sup> Zeit. deut. morg. Ges. 34, p. 465.

<sup>4</sup> Jour. o Soc. 1835)

<sup>5</sup> Zeit. deut. morg. Ges. T (LXIX pp. 279—284

who has recently critically examined the contents of the Tanjur, concludes that the most recent date at which it can be placed is the 8th century A.D.”<sup>1</sup>

So I cannot avoid the conclusion that of the three authors, Suśrūta, Vāgbhaṭa I and II, to which I’Tsing’s remarks may refer, the last has probably the best claims to that reference ; and the date assigned to Vāgbhaṭa I may well suit Vāgbhaṭa II i.e., “as late as the early 7th century A.D.”<sup>2</sup> and possibly still earlier<sup>3</sup>. Again it is impossible for us to say whether I’Tsing’s remarks may not appropriately refer to other authors whose works are lost to us.

Mention should also be made of the fact pointed out by Dr. Cordier that Vāgbhaṭa is mentioned in Rājtarāṅgī and his date is fixed there as 1196-1218 A.D.<sup>4</sup>

But the name of Vāgbhaṭa does not occur in Stein’s edition of Rāj, which is no doubt the most reliable, and so we can easily dismiss this view as untenable.

*Editions*—Vāgbhaṭa I’s book Aṣṭāṅga Saṃgraha has been printed in Bombay.

*Commentary*—Arunadatta—about 1220 A.D.

<sup>1</sup> P. C. Ray’s History of Hindu Chemistry, Intro., P. XXIX.

<sup>2</sup> Hoernle’s Osteology, Intro., p. 10.

<sup>3</sup> Dr. Kunte places him “at least as early as the second century before Christ,” Vide his Intro to Vāgbhaṭa’s Aṣṭāṅga Hṛdaya Saṃhitā.

<sup>4</sup> चिह्नमसुतः परमवैद्यो वाग्भटाचार्यः काम्पीरनगरपति जयसिंहस्य प्रजापालम् समये (ख. बादश ब्राताच्चाम्, शक ११८-४०) वर्तमाना आसीत्।

Quoted in Cordier’s Vāgbhaṭa et l’Aṣṭāṅga-Hṛdaya Saṃhitā, 1896.

## VĀGBHĀTA II.

The next great authority in Hindu medicine is Vāgbhaṭa II, son of Simha Gupta, an inhabitant of Sindh.<sup>1</sup> His work, Aṣṭāṅga Hṛdaya Saṃhitā, the author himself states, is based on the summary of Vāgbhaṭa the elder.<sup>2</sup> In the first chapter of Sūtra Sthāna, he acknowledges the help he received from the works of Agniveśa, Hārīta, Bhela, and others.<sup>3</sup> The fact that Caraka is not referred to here as one of the sources of Vāgbhaṭa II has been taken advantage of by some to prove the posteriority of Caraka.<sup>4</sup> They conclude that Agniveśa and Suśruta wrote their works long before him, and the Agniveśa Tantra was not called by the name of, and in fact was not as yet edited by, Caraka, at the

<sup>1</sup> विष्णवरी वास्तु इत्यसुनमे  
पिलामहो नामधरोऽक्षि यस्य  
सुतीज्ञभवतस्य च सिहगुमः  
तस्यायाइम् सिन्धुसु जातजन्मा ॥  
Aṣṭāṅga.

<sup>2</sup> Aṣṭāṅga Hṛdaya Saṃhitā, Uttara Sthāna, Ch XL, v. 82.

See foot note 2, p. 18.

<sup>3</sup> ब्रह्मा सद्वाऽऽयुष्मी वेद प्रजापतिमजिग्नहत् ।  
सीडिवनौ तौ सहस्रार्चं सीडनिपुदादिकान्मूनीन् ॥४॥  
तेऽग्निवेशादिकांसे तु पृथक् तत्वाणि तेनिरे ।  
तेभ्योऽतिविप्रकौर्ण्यः प्रायः सारतरीच्यः ।  
क्रियतेऽष्टाङ्गहृदयं नातिसंक्षिप्तविस्तरम् ॥५॥

Aṣṭāṅga Hṛdaya, Sūtra Sthāna, Ch I.

<sup>4</sup> "It would appear also that at the time Vāgbhaṭa lived, Agnivesha's work was not called by the name of Caraka, and Suśruta had also been written. Hence it follows that Caraka's edition of Agnivesha, that is the work now called Caraka, was probably edited after Suśruta had been written."

time Vāgbhaṭa II flourished. The argument is however not conclusive; it only shows that the Agniveśa Tantra was available to Vāgbhaṭa II in its original form. No definite results can be expected from this *argumentum ex silentio*. Again it may easily be imagined, and I think it is the right view of the question, that Caraka lived and edited Agniveśa's work long before Vāgbhaṭa, the reason of Caraka being not mentioned in Vāgbhaṭa's book, is the fact that Caraka did not usurp the authorship of Agniveśa Tantra but clearly states at the end of each chapter the real nature of his share in the authorship of his book in the following words:—"Here ends the chapter of Agniveśa Tantra as corrected and edited by Caraka." Many modern text books of medicine have been edited and improved, though the books are still called after the original authors. Moreover to make Caraka flourish after Vāgbhaṭa II would bring him to quite modern times.

We are however arguing on false premises. Though Caraka is not mentioned in the Sūtra Sthāna of Aṣṭāṅga Hṛdaya, his name occurs in the Uttara Sthāna.<sup>1</sup> So there can be no doubt that Caraka's edition of Agniveśa was current in India long before Vāgbhaṭa II wrote his Aṣṭāṅga Hṛdaya Saṃhitā.

<sup>2</sup> यदि चरकसंबोधीते तद्द्वयं सुशुवादि  
प्रणिमदितगदाना नाममाचेऽपि वाज्ञाः ।  
अथ चरकविहीनः प्रक्रियायामखिन्नः  
किमिह खलु करीतु व्यधितानां वराकः ॥४६॥

\* \* \* \*

स्वधिप्रस्थीते प्रीतिश्वेन्मुक्ता चरकसुशुतौ ।  
भेडाधाः किं न पद्यान्ते तस्माहृद्यं सुभाषितम् ॥५३॥

*Editions.*—There are various editions of the book but the following are reliable :—

1. By Dr. Anna Moreśvara Kunte, M.D., 2 vols., Bombay, 1880 ; 2nd Ed., 1891.
2. By Jibānanda Vidyāsāgara, Calcutta, 1882.
3. By Vijayratna Sen Kaviranjana, Calcutta, 1885-90.
4. By Ganeś Sastri Tartevidya, Bombay, 1888.
5. In Sanskrit and Bengali, with the commentary of Arūṇadatta by Vijayratna Sen Gupta, Calcutta, 1888.
6. In Sanskrit and Guzrathi by Behicharlal Nathuram, Ahmedabad, 1889.
7. In Sanskrit and Bengali by Kāliṣa Cundra Sen Gupta, Calcutta, 1890-1892.
8. In Sanskrit and Hindi by Pandit Robi Dutta, Bombay, 1890.
9. In Sanskrit and Marathi by Ganeś Kr̥ṣṇa Garde, Poona, 1891.
10. In Sanskrit and Bengali by *Kavirāja* Binod Lāl Sen, Calcutta, 1891-1892.

*Commentaries.*<sup>1</sup>—

1. Sarvāṅga Sundari<sup>2</sup> by Arūṇadatta, son of Mṛgāñka-datta, 1220 A.D.

<sup>1</sup> See Cordier's *Vāgbhaṭa et l'Aṣṭāṅgahrdaya Saṃhitā*, P. 6.

<sup>2</sup> इति श्रीमृगाङ्गदस्तपुत्र श्रीमद्वैद्यदत्तविरचिताथा



2. Āyurvedadarśayana (Dinacharyā Prakarana) by Hemadri or Kamadeva, Raja of Devagiri. It is available in parts only.
3. Aṣṭāṅgahṛdayarddyota by Aśadhara Sallaxana.
4. Padārthacandrikā by Candracandana.
5. Saṅketamañjari by Dāmodara.
6. Aṣṭāṅga Hṛdayatikā by Rāmanāth Vaidya.
7. Vālāprobodhikā (Anonymous).
8. Hṛdayabodhikā „
9. Pāthyā.
10. Vāgbhaṭartha Kaumudi by Hari Kṛṣṇa Sen Mullick.
11. Pradīpa by Jaśodānandan Sarkār, 1298 B.S.

### VĀGBHATA III.

The author of Rasaratna Samuccaya in the Colophons at the end of each chapter identifies himself with Vāgbhaṭa II. "Here ends Book first (or so) of R.R.S composed by Vāgbhaṭa, son of Simha Gupta, prince of physician." The salutation at the beginning of his book is strictly Buddhistic. The probable date of the book is "placed between the thirteenth and fourteenth centuries A.D."<sup>2</sup> "The chemical knowledge, as revealed in Vāgbhaṭa is almost on a par with that in the Suśruta," whereas the R.R.S. indicates an advanced state of that science. He quotes Rasārṇava as a source of his information; he does not mention opium as a medicine, and the Firaṅga roga and its treatment find no place in his book.

### MĀDHAVAKARA

He is the author of the famous work on Pathology or Nidāna. His book was translated into Arabic by the order of Harun-Al-Rasid and so the most recent date that can be assigned to him is the seventh century A.D.<sup>1</sup> Thakore Saheb of Gondal identifies him with Mādhabācāryya, the celebrated author of Sarvadarśana Saṅgraha, the brother of Sāyana, the commentator of the Vedas.<sup>2</sup> I do not find any authority for such an assertion and here is an example of fallacious reasoning based simply on the identity of names. Mādhabācāryya and Sāyana lived in the twelfth century A.D. Mention should also be made of the view expressed by Dr. Hoernle as certain that Mādhavakara, the author of Nidāna and Vṛnda Mādhava, the author of Siddhayoga are one and the same person. He holds that Vṛnda is the real name, but he was known to the commentators as Mādhava, for his melodious diction. There is no proof given of this opinion, and we have reasons for not accepting it. However as he does not treat of surgical instruments, his work is not important to us.

### CAKRAPĀNIDATTA.

Cakrapānidatta or more commonly Cakradatta in a Colophon<sup>3</sup> has given an account of himself in his book called

<sup>1</sup> Jolly's Indian Medicine, ff. 5, 6, pp 7-9

<sup>2</sup> History of Aryan Medical Science, Ch II, p. 35.

<sup>3</sup> गौडाचिनाय रसवद्याचिकारिपात्र—

नारायणस्य तनयः सुनयोऽन्तरङ्गात् ।

भानोरत्नु प्रथितलीध्रवलीकुलीनः

नी— कर्तुं पदाचिकारी ॥

Colophon in

ta

Cikitsā Sāra Saṅgraha: "The author of this work is Śrī Cakrapāṇi who belongs to the family of Lodhravali; and who is the youngest brother of Vānu and the son of Nārāyaṇa, the superintendent of the kitchen of Nayapāla,<sup>1</sup> the king of Gour" This book is arranged on the plan of Vṛnda in his Siddhayoga<sup>2</sup> which again follows closely as a companion volume to Mādhava's Nidāna.<sup>3</sup> The age of Cakradatta is about 1060 A.D.; and Vṛnda must have flourished between Mādhava and Cakrapāṇi for he quotes the former while he is himself quoted by the latter. So the probable age of Vṛnda is the ninth century A.D. Besides being a celebrated author, Cakradatta wrote excellent commentaries of Caraka and Suśruta. His extant works are—

1. Cikitsā Sāra Saṅgraha or Cakradatta. A treatise on Medicine

<sup>1</sup> For the date of Nayapāla, vide Cunningham's Archaeo. Survey of India. III P. 119; also J. A. S. LX Pt I. P. 46. Life of Atisa by S. C. Das.

<sup>2</sup>

यः सिद्धियोगसिद्धिताविकासिद्धियोग—

नदैव निष्पिपति कैवल्यमुद्भरेवा ।

भट्टचयचिपथविदविदा जनेन

दत्तं पतेत् सप्तदि मूर्द्धनि तस्य शापः ॥

Sloka at the end of the Cakradatta.

य इत्थादौ।—सिद्धियोग इति उन्नक्षत्रसंग्रहस्य संज्ञा, तद्विचित्रयोगसमेवा अधिका ये च सिद्धियोग अथ संश्लेष्य उक्तास्तानविकीयोगान् तत्रैव सिद्धियोगे निष्पिपति, तथा यो वा तानविकासिद्धियोगानित, संयह्यादुडिरेत् दूरीकुर्यात्, तस्य मूर्द्धेनि र्द्वृद्धशेन पुसा दत्तः शापः पतेत् । कौटुम्बेन पुंसा? भट्टचयचिपथविदविद्या । कारिका डहडीका चन्द्रटीकेति भट्टचयं, चिपथविदः च्छम्यजुःसामङ्गपः, तदिदा ॥

Sibadāsa Sen's Commentary.

<sup>3</sup> हन्ते व \* \* \* \* \* सुलिख्यते बदविनिष्पयक्रमेव ।

2. Cakradatta or Materia Medica. It treats on drugs applicable to a number of deseases.
3. Muktabali. This treatise on the nature and properties of medicinal drugs is ascribed to Cakrapāṇi.
4. Vānumati—Commentary on Suśruta Saṃhitā.
5. Cakratattwadipikā—Commentary on Caraka Saṃhitā.

*Editions.—*

1. Cakradatta or Cikitsā Sāra Saṅgraha edited by Kavirāja Pyāri Mohan Sen Gupta, Calcutta, 1295 B.S.
2. Cakradatta with Bengali translation by Chandrakumār Dās Kavībhūṣan.
3. Cakradatta with Bengali translation and with commentary of Śiva Dās Sen, by Jaśodā Nandan Saikār, 1302 B.S.

### SĀRANGADHARA.

He wrote Sārangadhara Saṃgraha. It is compiled from the works of Caraka, Suśruta, Vāgbhaṭa and others<sup>1</sup>. It is very popular in Western India. It treats on nosology and practice of Medicine. He was the son of Dāmodara and flourished in the fifteenth century A.D.

*Edition.—* By Kavirāja Pyāri Mohan Sen Gupta, Calcutta, 1296 B.S.

<sup>1</sup> प्रसिद्धयौगा सुनिषिः प्रयुक्ता  
शिक्षित्सकै वें वहशीऽनुभूताः ।  
विधीयते शाह्वरेण लेषां  
सुसंग्रह

*Commentary*.—*Sāraṅgadharatikā*: It is a commentary on the above work by Adhamulla.

### BHĀVA MIŚRA.

About 350 years ago, a compilation was made by Bhāva Miśra, son of Lataka Miśra, an inhabitant of Benares, from the most celebrated medical works and was called Bhāva Prakāśa.<sup>1</sup> He lived about 1550 A.D and was considered a "Jewel of Physicians and Master of Śāstras." He mentions China root called Tob Chini<sup>2</sup> in the Vernacular as a remedy of Firaṅga roga or Syphilis<sup>3</sup> which he describes for the first time in India. He was the first to make mention of certain drugs of foreign countries as Badhkshani Naspasi,

I अस्युच्चदात्मिक्यादतिनिमुनयी धीगरवानि यत्रा-  
लक्ष्मा से से निवर्जनेभुरपिलजन व्यक्षिविद्यसनाथ ।  
तत्तद् यन्मादृगहीतैः सुवधनमणिभि र्भावमिश्रविकिता  
शास्ते जायान्वकारं प्रशस्यितुमिमं सम्बिधते प्रकाशम् ॥

Bhāva Prakāśa, I. i.

इति श्रीमिश्र लटकतनय श्रीमिश्रभावविरचिते  
भावप्रकारे षष्ठं प्रकरण सम्पूर्ण ॥

Colophon at the end of Section I.

2 दीपलरवदा किञ्चित्कीरणा वक्षिदीपिष्टत् ।  
विवन्धाधानशुल्पी इक्षुचिकित्तिपिणी ॥  
वातव्याधीनपक्षारसुवार्द तनुवेदनाम् ।  
व्यपीडित विशेषेण फिरङ्गामयनाशिनी ॥

Bhāva Prakāśa, I. i.

3 फिरङ्गसंजके देशे चाहुल्येनव घङ्गवेन ।  
तथात् फिरङ्ग इत्युक्ती व्याख्याधिविशारदैः ॥

Bhāva Prakāśa, II. v

Khorasani and Parasika Vacha (Acorus Calamus), Sulemani Kharjura (date fruit of Suleiman),<sup>1</sup> and opium.

*Editions.—*

1. By Jibānanda Vidyāśagara, Calcutta, 1875.
2. By Rasik Lāl Gupta.
3. By Kāliśa Candra Vidyāratna.

Besides these books, the number of Sanskrit medical works is simply legion, many of them are daubed with fancy names and are excellent treatises on the different branches of medical science. But they are quite foreign to our purpose. I intend to publish in a separate volume short notices of the medical authors and their works, and so we need not dwell on them here.

<sup>1</sup> पारसीक थवानी तु यवानी मट्टी गुर्जः ।  
विशेषात् पाचनी रुचा ग्राहिणी मादिनी गुरुः ॥

Bhāva Prakāśa, I.

पारसीकवचा शुक्ला प्रोक्ता हैमवतीति सा ।  
हैमवत्युदिता तद्वातं हन्ति विशेषतः ॥

Ibid.

उक्तं खसफलदीरभाफूलमहिफणकम् ।

Ibid.

चीनाक सद्धः क्षपूरः कफवद्यकरः स्तूतः ।

Ibid.

खन्जुरी गीज्ञानाकारा परजीयादिहागता ॥

Ibid.

## CHAPTER II

### HOSPITALS AND DISPENSARIES.

Before entering into our proper subject, it would not be amiss to notice here two objects—Hospitals and Anæsthetics—which are essentially necessary for the development of surgical knowledge. We know from the Edict II of Aśoka that India during his reign was studded with hospitals not only for the treatment of human beings but also for the brute creations. But even before Aśoka, hospitals flourished in India. In Caraka we can trace the germs of such an institution though it was used for rich men and did not accommodate the public.<sup>1</sup>

<sup>1</sup> दृष्ट निवात प्रवार्तकदेश सुखप्रविचारमहुपयक धूमातपरजसामनभिगमनीयमनिष्टानाच्च  
श्वस्त्र-स्पर्श-रस-रूप-गव्याना सीपानीदूसलमुषलवर्जःखानस्त्रमहानसीपित बालुविद्या-  
कुशलः प्रशस्ते रथमेव तावत् पूर्वमुपकल्पयेत् ।

ततः श्रीलश्चौबानुरागदात्यप्रादचिक्खोपपन्नानुपचारकुशलान् सर्वकर्मसु पर्यवदातान्  
सूपीदमपाचकस्वाहकीत्यापकसंवेशकैषविषकाच्च परिचारकान् सर्वकर्मस्प्रति-  
कुशलान् । तथा गीतवादिवीज्ञापकश्चीकरणाद्याभ्यायिकेतिहास-पुराणकुशलानाभिप्राय-ज्ञाननु-  
स्ताय देशकालविद् परिशद्याच्च । तथा लावकपिङ्गलशशहरिष्ठेनकालपुच्छकमुशगमात्रकी-  
रमान् । गाञ्छ दीर्घौ श्रीलवदीमनातुरा जीवडन्त्सा सुप्रतिविहितहणशरस्यानीयाम् । जल-  
पाचाचमनोदकीष्मणिकपिठरचटकुम्भीकुम्भकुण्डशरावद्वीकपरीपचनमस्यानचेलसूचकार्पासी-  
र्णदीनि च अश्वनासनादीनि दौपम्यस्तम्भापतियहाणि सुप्रयुक्तास्तरणीतरमच्छदी  
पवानानि स्खापाश्वद्यानि सवेशनीपवेशनहेहस्तेदास्यद्विप्रदेहे परिषेकालुलेपनवमनविरेचना-  
स्खापनानुवासन-शिरीचिरेचनमूर्च्छाचारकर्मणामुखचारमुखानिसुप्रचालितीपधानाऽच्च स्नानाखर-  
मव्यक्ता दृश्य शस्त्राणि चीपकरणार्थानि ।

धूमनेत्रं वस्तिनेत्रं चोत्तरवस्थिकञ्च । कुशहस्त तुलाच्च मानभाण्डञ्च इततेलवसामज्ज्वीद्र-  
फाणितलवण्येभनीदक-मधुमुरासीवीरकतुषीदकस्त्रेयमेदकदधिमण्डोदधिव्वान्नाम्लमूचाणि च ।  
तथा आलिष्टिकमुहमाषयवतिखकुलत्यवदरम्भीकापृष्ठकाभयामलकविभीतकानि नाना-  
विधानि च । <sup>३</sup> द्रव्याणि ते<sup>४</sup> यमाणि संयुक्तीयदीप-  
समाध्यातानि घौषधानि वशाम्यदपि विफ-

He advises us as follows :—The engineer is to erect a strong and spacious building, well-ventilated at one part, the other part being free from draughts. The scenery should be pleasing and one should feel happy to walk in it. It must not be behind any high building, nor exposed to the glare of the sun. It should be inaccessible to smoke and dust. There must not be anything injurious to our senses as regards sound, touch, taste, form and smell. There should be stairs, large wooden mortars and pestles ; and there must be additional bare ground for the construction of a privy, bath-room and kitchen. The staff should consist of servants and companions. The servants should be good, virtuous, pure, fond, clever, generous, well trained in nursing, skillful in works, able to cook rice and curries well, competent to administer a bath, expert masseur<sup>1</sup>, trained in raising and moving a patient, dexterous in making or cleaning beds, practiced in the art of compounding medicines and willing workers not likely to show displeasure to any order. The companions should be good singers and musicians, fluent speakers, well-versed in distichs, ballads, tales, history and mythology, well-acquainted with the design of a patient's nods or signals, agreeable and should have knowledge of the season and the locality. The various kinds of animals

<sup>1</sup> From the accounts of Megasthenes, we learn that four attendants used to massage him (Candragupta) with ebony rollers during the time that he was engaged in disposing of cases. Such an attendant (samvahaka) is a minor character in the Toy Cart or little Clay Cart, drama, transl by Ryder, in Havard Oriental Series, Vol IX, 1905—Smith's Early History of India, 2nd Ed , Page 122 Footnote. We also find in the Kāmandikya Nitisāra that the king is cautioned against shampooers who have the opportunity of poisoning him.

सूक्ष्मजनकतारस्त्रैपका व्ययकास्था ।

मीकाहच नादस वाइका अपि ॥

should always be kept in stock such as Lāva (*Perdix Chinensis*), Kapinjala (partridge), hares, sheep and the different kinds of deers, Ena (the black antelope) blacktailed deer, and Mrgamātrka. There should be a dairy attached to the building. The cow should be good natured and healthy, and should yield profuse milk. The calves must be living. There should be stocked for them potable water and hay in a clean fold. In that building must be kept the following necessary articles :—

Water vessels, washing basins, tubs, jars, dishes, ghata, (small jars) kumbhī, kumbha (larger and smaller vessels), kundu (jug or pitcher), soraba (earthen basins), spoons or ladles, cooking utensils, churning rods, cloth, thread, cotton, wool, bedding and asana (seats). Near them should be placed drinking vessels of gold and spittoons. The bedding should consist of a broad carpet, bed-sheet, pillows, and a bedstead. There should be collected good furnitures for beds and seats, and also utensils and appliances for application of oleaginous medicines, heat, oil, ointment, bath and perfumeries, and for the acts of emesis, purgation, draining of the brain, injection into the rectum, defaecation and urination (*i.e.* Vastiyantra, urinal, bed-pan &c.). The blunt and sharp instruments and their accessories, well-washed mullers and whetstones of different degrees of smoothness—polished, plain or rough—should be near at hand, the tubular instruments for fumigation, inhalation and injection into the rectum, urethra and vagina, should be available there; and the following articles are also to be stocked :—brushes and brooms, weighing scales and weights, ghee (melted butter), oil, fat, marrow, honey, molasses, salt, wood, water-spirituous liquor formed by steeping husked grains of barley in water or by boiling together the husks of fried māskalāya

(pulse of Phaseolous Rox), barley and water, spirituous liquor from the blossoms of Lythrum Fruticoscence with sugar, spirit distilled from the different sorts of grains, curdled milk, rice, gruel, whey, sour liquid produced from the acetous fermentation of powdered paddy, and the various kinds of wines of animals. Different kinds of rice such as Śāli (or that reaped in cold season) and Sasthika (or that grown in hot weather in low lands and reaped within sixty days of its sowing), Mudga (Phaseolus mungo), Māṣa (Phaseolus Rox), Yava (Hordeum Vulgare), sesame (Seasamum Indicum), Kullatha (Dolichos Biflorus), plums (Zizyphus Jujube), raisins (Vitis Vinifera), Paruṣa (Grewia Asiatica), Abhayā (Chebulic Myrobalan), Āmlakī (Phyllanthus Emblica), Vibhitaka (Terminalia Bellerica) and other classes of medicaments, as oils, diaphoretics, sternutatories, cathartics, emetics, purgatives, astringents, stomachics, digestives, calmatives, carminatives and various other forms of medicines, are required for treatment. Besides these, there must be stored the antidotes to poisons caused by overdoses of medicines and other appliances likely to add to the patient's comfort

To this may be compared the description of the Greek iatrum, which is mentioned in the Hippocratic treatise, *De Medicis*. He directs that "it should be so constructed that neither the wind nor sun might prove offensive to the patient, and goes on to enumerate the various articles which it should contain, such as scalpels, lancets, cupping-instruments, trepans, raspatories, with bandages and medicines." 1

Suśruta gives us a list of appliances<sup>1</sup> required in surgical operations:—

1. Blunt Instruments.
2. Sharp Instruments.
3. Potential Cautery.
4. Actual Cautery.
5. Salākā or rods.
6. Horns.
7. Leeches.
8. Hollow bottle gourd.
9. Jāmbav-oustha [a bougie of blackstone, the extremity of which is shaped like the fruit of the Jambul tree (*Urginea Jambolana*)]
10. Cotton.
11. Pieces of cloth
12. Thread.
13. Leaves.
14. Materials of bandaging.
15. Honey
16. Ghee, or clarified butter
17. Suet.
18. Milk.
19. Oils.
20. Tarpan — flour of any perched grain or condensed milk etc. mixed with water to mitigate thirst.
21. Decoctions.
22. Liniments.
23. Plasters.
24. Fan.
25. Cold and hot water
26. Iron pans, kalasi and other earthen vessels; beddings and seats
27. Obedient, steady and strong servants.

*The Lying-in-room* —Caraka says: ‘Before the ninth month of pregnancy, the lying-in-room should be constructed. The land should be cleaned of bones, gravels and potsherds. The ground selected should be of auspicious colour, taste and smell. The gate of the house should face towards the east or the north.<sup>2</sup> There must be a store of wood such as Vilva (Aegle

<sup>1</sup> अदीनामतं कर्त्त्वं चिकीर्षता बैवेन पूर्णमेदोपकल्पयितव्यानि तद्यथा यज्ञशस्त्राचाराग्रिम्भस्त्राकाश्वर्जलोकालावृत्ताम्बवीष्टपिचुप्रांतसूचपत्तपद्मधूष्टतवसापथसैलतपनकषायनेपन कल्पव्यक्तवशीतीशीदक कटाहदौनि पांरकम्भयङ्गम हिंगवाः स्थिरा वत्तवन्तः।

Suśruta Samhitā. I. v

<sup>2</sup> “The best sort of ground should abound with milky trees, full of fruits and flowers; its boundary should be of a quadrangular form, level and smooth, with a sloping declivity towards the east producing a hard mound, with a view from left to right of an able door, fertile of an air form

Marmelos), Tunduka (*Diospyros Embryopteris*), Inguda (*Balanites Rox* ) Bhallākaka (*Semecarpus Anacardium*), Vāruṇa (*Ocimum Basilicum*), Khadura (*Acacia Catechu*) or wood of other kinds said to be auspicious by a Brāhmaṇ versed in the Atharvaveda; and there must be a sufficient provision for clothes, liniments, and covers For the pregnant woman, be careful to have a fire-place, water, pestles and mortars, a privy, a bathing place, and ovens These should be constructed according to the science of engineering and should be pleasant with regard to the season There should be collected clarified butter, oil, honey, different kinds of salts as rock salt, sonchal salt, and black salt, Vidaṅgas (*Embelic Ribes*), treacle, Kuṭṭha (*Saussurea Lappa*), Kūlīma (*Pinus Deodara*), Nāgara (dried root of *Zinziber Officinale*), Pippalī (*Piper Longum*), its root, Elasti-pippalī (*Scindapsus Officinalis*), Mandukpāni (*Hydrocotyle Asiatica*), Elā (*Elettaria Cardamomum*), Lāngoli (*Gloriosa Superba*), Vāca (*Acorus Calamus*), Cavya (*Piper Cava*), Chitrāka (*Plumbago Zeylanicum*), Chūravilva (*Pongamia Glabra*), Hingu (*Ferrula Assafætida*), Sarsapa (Mustard seeds), Laśuna (*Allium Sativum*), finely or thickly powdered rice, Kadamba (*Anthocephalous Kadamba*), Ātasi (*Linum Usitatissimum*), Vallija (*Cucurbita Pepo*), Bhurya (*Betula Bhojpatra*), Kulatha Dolichos *Uniflorus*), Maireya (a spirituous liquor from the blossoms of *Lythrum Fruticoscence*) and Āshava (Vinous fermented liquor from sugar or molasses, Rum). Also collect two pieces of

colour containing a great quantity of soil, producing water when dug to the height of a man's arm raised above his head, and situated in a climate of moderate temperature."

stone (muller and stone slabs), two pestles, two mortars, an ass, a bullock, two sharp needles of gold and silver, two skeins of threads, sharp instruments of steel, two wooden bedsteads (*Aegle Marmelos*), and wood (*Tinduka* and *Ingudi*) for easily igniting fire. The female attendants should be mothers of children, and friends and relatives of the patients. They must be fond of her, skillful in work, intelligent, jolly, laborious full of tender love for the children and a favourite of the mother.”<sup>1</sup>

*The Child's Room* —He continues—“ The engineer is to construct a room, spacious, beautiful, full of light, well-ventilated but free from draughts, strong, and free from beasts of prey, animals with fangs, mice and insects. There should be kept water, mortar and separate places should be assigned for bathing, cooking, urination and defaecation. It should suit the season of the year. The beddings, seats and covers should be comfortable and suitable to the season. Auspicious ceremonies should be performed in that room such as *homa*, expiations and presents to gods, for the proper protection of the child, and there should be present pious old men, doctors, and devoted

<sup>1</sup> प्राक् चैवास्त्रा नवमान्मासात् सुतिकामार्दं कारयेदपह्लस्थिरकराकपालेदेशं प्रशस्त-  
खपरस्यन्धावां भूमीं प्राणादारमुद्गारं वा । तत्र वैत्वानां काष्ठाना तिन्दुकैङ्गुदानां भस्त्रात-  
कानां चारुषानां खदिराना वा यानि चानान्यपि ब्राह्मणाः असेयुरथर्ववेदविद्वल्लहस्त्रानालेप-  
नाश्वादनापिधानसन्धर्पतं तत् । वासु-विद्या-हृदययोगेनाग्निसत्त्विलीलुखलवर्द्धस्थानस्त्रानभूमि-  
महानस्त्रत्तुसुखवृ । तत्र सप्तिसैखमधुसैन्धवसौवर्चलकालखण्णविञ्छुगुडकुष्ठकिलिमनागर-  
पिपलीमूलहस्तिपिपलीमरुकपर्ण्यलालाङ्गलीवचाचव्यच्चित्रकचिरविलवहित्तुसर्षप लशनकन-  
कनिकानीपातसीवत्विजभूर्भाः कुलत्यमैरेयसुरासवाः सप्तिहिताः स्त्राः ॥ वद्यामानौ  
इौ दे चख्नमूष्ट्वे दे उलुखले उरो द्रवभव इौ च सीद्धां सूचौपिपलकौ सौवर्णराजतौ वृ  
अस्त्रापि थौत्वाकसानि इौ च विलवमयौ पर्यङ्गौ तैन्दकैङ्गुदानि काष्ठन्यग्निसमुच्चणानि  
ज्ञियत्व वह्नी वह्नप्रजाताः सौहाहंशुकाः सततमनुरक्ताः प्रदक्षिणाचाराः प्रतिपत्तिकृशलाः  
प्रकृतिवृत्सत्त्वात्मकविशादाः क्षेत्रस्त्रिष्ठावीमित्तां त्रास्त्रायसादर्थवेदविदो यज्ञान्यदपि तत्र  
उमर्षं मन्त्रेत यत्र ब्राह्मना ब्रूपं ज्ञियत्व इवास्तुकाव्येम् ।

attendants constantly. The child's bed covers and sheets should be soft, light, pure and scented. These should always be free from sweat, dirt, worms or bugs, urine and faeces. If repeated change of new clothes be impossible, the soiled coverings should be well washed and the beddings well purified with steam and thoroughly dried before they are used again. To purify or sterilise the dress, beddings, coverings and sheets by fumigation use the following medicines with clarified butter.—Barley (*Hordeum Vulgare*), mustard seeds, linseeds, assafœtida, Guggula (*Balsamodendron Mukul*), Vāca (*Acorus Calamus*), Coraka (*Andropogon Aciculans*), Vayasthā (*Chebulic Myrobalan*), Golomī (*Panicum Dactylon*), Jatulā (*Nardostachys Jatamansi*), Palankasā (a variety of *Guggula*), Aśoka (*Saraca Indica*), Rohinī (*Picerorhiza Kurroa*) and sakes' skin .... A variety of toys to please the child should be at hand and these should be coloured, light, musical, beautiful and must not be sharp pointed. They should be of such a size and shape as cannot be put into the child's mouth or do not terrify or kill the child.”<sup>1</sup>

<sup>1</sup> अतीङ्गन्तरं कुमारागारविधिमहूव्याख्यास्यामः ॥ वासुविद्याकुशलः प्रशस्त रम्यमतमस्तु निशातं प्रवातैकदेश दृढमपगतश्वापदपश्चिमूषिकपतङ्गः सुखंविभक्तसलिलोद्भवत्तमूच्चवर्चः स्थानक्षानभूमिमहानस्तुत्सुखः यथत्तु ग्रथनासनालरणसम्पन्नः कुञ्चयात् । तथा सुविहित-रक्तविधानवलिमङ्गलहीनप्रायविशिष्टं शुचिहङ्गबैद्यानुरक्तजनसम्पूर्णमिति । कुमारागारविधिः ॥ ग्रथनास्तरणप्रावरणानि कुमारस्य भृदुलस्तुयुचिसुगम्भीनि स्युः । स्वेदमलजन्तुमनि मूत्रपूरी-घीपस्त्रानि च वडज्ञानि स्युः ॥ असर्वि सम्बिडन्येषा तान्येव च सुप्रचालितपीधानानि मुधूषितानि सुयज्जशुक्काण्युपदीर्घं गच्छेत् । धूपनानि पुनर्वाससा ग्रथनालरणप्रावरणानां च घवसर्पपातसीहिङ्गुगुगुलवचाचीरकवयः स्थागीलोमीजटिलापलङ्घाशीकरोहिणीसर्पनिमोर्मोकानि धृतसम्प्रदुक्षानि स्युः ॥ मणश्च धारणीयाः । कुमारस्य खड्गरुखवयवृषभानो जीवतामेव दक्षिणेष्वी विधार्थीऽयायि गृहीतानि स्युः । मन्त्राद्याशौषधयी जीवकर्षभकौ च यान्वयन्यानि ब्राह्मणा प्रशंसेत् । क्लीङ्गनकानि खलवस्य तु विचित्राणि घीषवल्प्यमिरा-माणि अगस्त्यतौच्छाग्नि अनाम्यप्रवेशीनि अग्रायहराणि अविद्यासनानि स्युः ॥

Susruta directs that there should be a particular room provided for patients who have undergone surgical operations.<sup>1</sup> "Patients suffering from surgical diseases as inflammatory swelling, wounds &c. should, from the very commencement of their illness, confine themselves inside a clean house, situated in a wholesome locality, free from draughts and not exposed to the glare of the sun. For, in such a building, constitutional, mental and accidental diseases are not likely to occur. In that room, the bed for the patients should be soft, spacious, and well-arranged. The patient should lie down, his

<sup>1</sup> ब्रह्मिनः प्रथममेवागारसन्विच्छच्चागारं प्रशस्तवालादिक कार्यं ।

प्रशस्तवालुनिष्टहे शूचावातपवच्छिंत ।

निवात न च रीगाः सुः शरीरागच्छुभासाः ॥

दन्तिन् प्रयनभस्त्वार्थं खालीर्णं स्तोत्रां प्राक्षिप्तस्त्रं सञ्जलं कुर्वेति ।

मुखचेष्टप्रचारात् सात् खालीर्णं शयने ब्रह्मी ।

इत्या दिशि स्थिता ईवासतपूजार्थं नतं शिरः ॥

तस्मिन् सुहृद्भिरतुकूलैः प्रियमदैक्षयास्त्वमात्री वयेष्टमासीत् ।

सुहृदो विचिदप्त्यागं कथाभिन्नस्वेदनाः ।

आङ्गवासदनौ वहशत्वरकूलाः प्रियमदाः ॥

न च दिवानिद्रावश्चः सात् ।

दिवास्त्रप्राद्रुषे कर्ण्युर्गतार्णं गौरव तथा ।

श्वयद्युक्तद्वारागः खालद्वैव भृशं भवेत् ॥

उत्थानसर्वश्चनपरिवर्तन्त्वं क्रमणीच्छिष्ठादिषु चामचाटास्त्रप्रसर्तो ब्रह्णं सरच्छत् ।

स्थानासन चक्रमण यान्द्यानातिभाषण ।

ब्रणवान्न निषेदेत शक्तिसानपि मानवः ॥

उत्थानाद्यासन स्थान श्वया धातिनिषेदिता ।

प्राप्तुयाचाहताद्वं रुजस्त्वाहिवर्जदीत् ॥

अस्थायाच्च स्तौर्णां सन्त्वान्त्वस्त्रापयस्त्वसंस्तर्णानिद्रतः परिहर्ते ।

head pointing towards the east, and keep there some weapon for his own protection. On such a bed, the patient can lie comfortably and turn to his sides at pleasure. He should be surrounded by his dear friends, for their sweet words relieve the pain of inflammation. The female friends, however, should be avoided and kept at a distance. He should observe strictly the orders of the surgeon as regards his food, drink and mode of living. He should have his hairs clipped and nails pared short, be pure in his person, put on white clothes and devote himself to religious duties. A light should be kept burning and garlands of flower, weapons &c., should be provided in the room to ward off the demons. He should be cheered and inspired by pleasant stories, and the physicians and the priests should attend the patient morning and evening. Pastils made of *Sinapis Nigra* and *Azadirachta Indica* with clarified butter and salt, should be burnt in the room morning and evening for ten days continually. The inflamed part should be fanned with a *camar* or yolk-tail. Sleep during the day, exercise and sexual intercourse must on no account be indulged in."

Susruta also describes the kitchen of the king thus:— "That is the proper kitchen which is built on good ground, towards an auspicious quarter, full of utensils for cooking, spacious, clean, provided with windows guarded by a network, frequented by friends, cleared well of grass furnished with a canopy, purified by auspicious ceremonies, and managed by men and women of good character. The superintendent of the kitchen should, like the doctor, be noble and virtuous. The cook and servants should be pure, noble, capable, mild good looking engaged in their respective duties high minded should have the hairs and nails cut short steady

well-bathed, of subdued passion, well-dressed, obedient and have their heads well-covered.'

"The doctor in charge of the kitchen should be of noble family, religious, friendly, a clever manager for getting king's food properly prepared, ever careful for his health, non-avaricious, simple, fond, grateful, good-looking, cool-tempered, well-behaved, not proud and envious, laborious, of subdued passion, forgiving, pure, of good character, kind, intelligent, not easily fatigued, always loving, well-wisher, capable, bold, clever, skillful, not unreasonably tender, provided with medicines and well proficient in the art of healing '<sup>1</sup>

कुलौन धार्मिक स्त्रिय सुभृतं सततीत्यहं ।  
अखम्ब अशठ भक्तं हतप्त्रं प्रियदर्शन ॥  
प्रोधपात्रमात् सर्वं मदाक्षरं विवर्जित ।  
जितेन्द्रियं चमावतं शुचि शीलदयात्मित ॥  
मेघाविनमसंशालनमनुरक्तं हितैषिण ।  
पटु प्रगाम्भ निपुण दृक् भास्याविवर्जित ॥  
पूर्वोक्तैश्युर्युक्तं नित्यं सत्रिहितगद ।  
महानसं प्रशङ्खीत वैद्य तदिव्यपुनितं ॥  
प्रशस्तदिगद्देशङ्कतं शुचिभास्तु महस्तु च ।  
सजालकं गवाच्चाढा मात्रवर्गं निधिवितं ॥  
विकचस्तु सुभृतं सत्रितान ज्ञातार्थं ।  
परीचित स्त्रीपुरुषं भवेत्तापि महानसं ॥  
तनाभ्यच्च निपुणीत प्राप्ती वैद्यगुणान्वितं ।  
शुचयी दक्षिणा दक्षा; विनौताः प्रियदर्शना ॥  
सत्रिभक्ताः सुमनसी नौष केशनखा, स्थिराः ।  
स्त्राताडः स्थिरम्, क्षतीणीषा, सुसंयुता, ॥  
तस्माच्चाच्चा विधेयास्त्रा विधिः परिकर्मिणः ।  
आहारस्त्रिय यशापि भवन्ति प्राणिणी यत् ॥  
तनामाहानसे वैद्यः प्रभाद् रहिती भवेत् ।  
माहानसिक दीढारः सौपौटनिक पौपिकाः ॥  
भवेत्युद्यवश्या ये चायन्ये तु कैचन ।  
इत्तित्त्वो मनुष्याणां वालचेष्टमुख्यैक्षतः ॥

In the Kāmandakiya Nītisāra, we find the king advised to take thoroughly examined food, and to be surrounded by physicians well-versed in the science of Toxicology;<sup>1</sup> and again it is said that king should take his medicines, cordials, and edibles after having his medical attendants tasted them.<sup>2</sup> The king is advised to kill his enemy by weaning over his physician or by administering poisonous liquids.<sup>3</sup>

In the Mahāvāgga<sup>4</sup> we find the qualities of a good patient and a good nurse described —

“6. What are five qualities, O Bhikkhus, which when a sickman has, he is easy to wait upon—

When he does do what is good for him ; when he does know the limit (of the quantity of the food) that is good for him ; when he does take his medicine, when he does let a nurse who desires his good, know what manner of disease he has, or when he is getting worse that that is so, or when it is getting better than that is so , and when he has become able to bear bodily pains that are severe, sharp, grievous, disagreeable, unpleasant and destructive to life. These are the five qualities, O Bhikkhus, which when a sickman has, he is easy to wait upon.

<sup>1</sup>

विषवैकदकैः स्वात विषप्रमनिभूषितं ।

परीक्षितं समश्चीयाज्ञाहृत्वाविद्विषगृहः ॥ १० ॥

Kāmandakiya Nītisāra vii. v. 10.

<sup>2</sup>

अौषधानि च सर्वानि पानं पानीयमेव च ।

तत्कथपकैः समश्चाद्य प्राश्नीयाङ्गीजनानि च ॥ २७ ॥

Ibid. vii. v. 27.

<sup>3</sup>

भिषमेदेन वा शतुं रसदानेन साप्ययेत् ॥ ७० ॥

Ibid. IX. v. 70.

<sup>4</sup> Mahāvāgga viii, 28 6 & 8 (Sacred Books of the East).

8. There are five qualities, O Bhikkhus, which, when one who waits upon the sick has, he is competent to the task—when he is capable of prescribing medicines ; when he does know what (diet) is good and what is not good for the patient, serving what is good and not serving what is not good for him , when he does wait upon the sick out of love, and not out of greed , when he does not revolt from removing evacuation, saliva or vomit ; when he is capable of teaching, inciting, arousing and gladdening the patient with religious discourses These are the five qualities, O Bhikkhus, which, when one who waits upon the sick has, he is competent to the task."

There is also good deal of evidence to show that medicines were distributed free to the poor and to the pious men. When Viśakhā asked for eight boons of the Buddha, she mentioned amongst them the privilege of bestowing her life long " food for the sick, food for those who wait upon the sick and medicines for the sick " and explained her reasons as follows<sup>1</sup> :—

" 9. Moreover, Lord, if a sick Bhikkhu does not obtain suitable foods, his sickness may increase upon him, or he may die. But if a Bhikkhu have taken the diet that I shall have provided for the sick neither will his sickness increase upon him, nor will he die It was this circumstance, Lord, that I had in view in desiring to provide the Samgha my life long with diet for the sick.

Moreover, Lord, a Bhikkhu who is waiting upon the sick if he has to seek out food for himself, may bring in the food (to the invalid) when the sun is already far on his course, and he will lose the opportunity of taking his food. But when

he has partaken of the food I shall have provided for those who wait upon the sick, he will bring in food to the invalid in due time and he will not lose the opportunity of taking his food. It was this circumstances, Lord, that I had in view in desiring to provide the Saṅgha my life long with food for those who wait upon the sick.

10. Moreover, Lord if a sick Bhikkhu does not obtain suitable medicines his sickness may increase upon him, or he may die. But if a Bhikkhu have taken the medicines which I shall have provided for the sick, neither will his sickness increase upon him, nor will he die. It was this circumstance, Lord, that I had in view in desiring to provide the Saṅgha, my life long with medicines for the sick."

The Edict No. II of Aśoka clearly shows that charitable institutions were common in India, during his reign. The Edict runs as follows:—

" Everywhere in the kingdom of the king Piyadasi, beloved of the gods, and also of the nations who live in the frontiers such as the Cholas, the Pandyas, the realms of Satyaputra and Keralaputra, as far as Tambapani, (and in the kingdom of) Antiochus, king of the Greeks and of the kings who are his neighbours, everywhere the king Piyadasi, beloved of the gods, has provided medicines of two sorts, medicines for men and medicines for animals. Wherever plants useful either for men or for animals were wanting they have been imported and planted. Wherever roots and fruits were wanting, they have been imported and planted. And along public roads, wells have been dug for the use of animals and men."

We also learn from Huen Tsang's account that Śuddhidaṇḍī II

(610 - 650 A. D.) was inclined towards Budhism and he forbade the slaughter of living animals, built *stupas* and "in all the highways of the towns and villages throughout India, he erected hospices, provided with food and drink, and stationed there physicians with medicines for travellers and poor persons round about, to be given without any stint."<sup>1</sup>

He also mentions about the father of the Bhikkhu Śrutavimśatikoti, that "from his house to the snowy mountains, he had established a succession of rest-houses, from which his servants continually went from one to the other. Whatever valuable medicines were wanted, they communicated the same to each other in order, and so procured them without loss of time so rich was this family."<sup>2</sup>

He also mentions charitable institutions called *Punyaśālās* as common in India. "There were formerly in this country (Tsch-kia-Takka) many houses of charity (goodness or happiness, *Punyaśālās*) for keeping the poor and the unfortunate. They provided for them medicines and food, clothing and necessaries, so that travellers were never badly off."<sup>3</sup>

Again he says "Benevolent kings have founded here (Mo-ti-pil-lo or Matipura) a house of "merit" (*Punyaśālās*) This foundation is endowed with funds for providing choice food and medicines to bestow in charity on widows and bereaved persons, on orphans and the destitute."<sup>4</sup> A similar *Punyaśālā* or hospice was in K'ei-P'an-to (Kabandha).<sup>5</sup> In describing

<sup>1</sup> Beal's Record, Vol. I, p. 214.

<sup>2</sup> *Ibid*, Vol. II, p. 188.

<sup>3</sup> *Ibid*, Vol. I, p. 165.

<sup>4</sup> *Ibid*. Vol. I, p. 198.

<sup>5</sup> *Ibid*, Vol. II, p. 303.

Multan he says: "They have founded a house of mercy (happiness), in which they provide food, and drink, and medicines for the poor, and sick, affording succour and sustenance."<sup>1</sup> Of Śilāditya he says: "Every year he assembled the Sramanas from all countries, and on the third and seventh days he bestowed on them in charity four kinds of Alms (*viz*—food, drink, medicine, clothing)"<sup>2</sup>

Fa Hian (405-11 A.D.), a contemporary of Candragupta Vikramāditya, describes the charitable dispensaries in the town of Pāṭaliputra thus:—"The nobles and householders of this country have founded hospitals within the city to which the poor of all countries, the destitute, cripple and the diseased may repair. They receive every kind of requisite help gratuitously. Physicians inspect their diseases, and according to their cases order them food and drink, medicines or decoctions, every thing in fact that may contribute to their ease. When cured, —they depart at their convenience"<sup>3</sup> Smith remarks. "No such foundation was to be seen elsewhere in the world at this date, and its existence, anticipating the deeds of modern Christian charity, speaks well both for the character of the citizens who endowed it, and for the genius of the great Aśoka whose teaching still bore such wholesome fruit many centuries after his decease. The earliest hospital in Europe, the Maison Dieu of Paris, is said to have been opened in the 7th centuries."<sup>4</sup>

"Upatisso, son of Buddha Das, builds Hospitals for cripples,

<sup>1</sup> Beal's Record, Vol. II, p 274

<sup>2</sup> Ibid, Vol I, p 214

<sup>3</sup> Ibid, Vol I, Intro len

<sup>4</sup> Smith's Early History of Ind. 2nd Ed p 280

for pregnant women and for the blind and diseased.<sup>1</sup> Dhatushena builds Hospitals for cripples and sick<sup>2</sup>. Buddha Das<sup>3</sup> himself ordained a physician for every ten villages on the high road, and built assylums for the crippled, deformed and destitute."<sup>4</sup>

The animal Hospitals or Piñjrapoles which still exist at Ahmedabad, Surat, and Sodepore in Bengal, and elsewhere may be regarded as the survivals of the institutions founded by the Maurya monarch. The following account of the Surat Hospital in the 18th century is from the pen of Hamilton:—

"The most remarkable institution in Surat is the Banyan Hospital, of which we have no discription more recent than 1780. It then consisted of a large piece of ground enclosed by high walls, and sub-divided into several courts or yards for the accommodation of animals. In sickness they were attended with the greatest care, and here found a peaceful assylum for the infirmities of old age.

'When an animal broke a limb, or was otherwise disabled, his owner brought him to the Hospital, when he was received without regard to the caste or nation of his master. In 1772 this hospital contained horse, mules, oxen, sheep, goats, monkeys, poultry, pigeons, and variety of birds, and also an aged tortoise, which was known to have been there seventy-five years. The most extraordinary ward was that appropriated for rats, mice, bugs, and other noxious vermins for whom suitable food was provided."<sup>5</sup>

<sup>1</sup> Mahāwanīśo, p. 249.      <sup>2</sup> Ibid, p. 245.

<sup>3</sup> Ibid, p. 256.

<sup>4</sup> Cunningham's Bhilsa Topes, p. 54, foot note

Hamilton's Description of Hindustan 1801 Vol. I, p. 718 quarto ed Crooke, Things Indian, Art. Pinjrapole M. y 1806).

We quote here from Hemādri the opinions of the sages and the Purāṇas as to the merit of the founder of a hospital<sup>1</sup>.—

### Visvāmitra.

There is no gift more precious than the gift of cure ; therefore it should be given freely to the sick to augment one's good fortune. He who gives medicines, diet, food, oil for smearing and shelter to the sick, becomes free from all diseases.

### Samvartta.

The giver of medicines, oleaginous remedies and food for the cure of the sick, becomes free from all diseases, happy and long-lived.

### Agastya.

Those who give rice and medicines freely attain happiness, being free from disease.

### Saura Purāṇa.

He, who gives medicines to the sick to cure their diseases always remains healthy, long-lived and happy.

<sup>1</sup> अथ आरोग्यदानं ।

तचारोग्यदानन्ताव दुष्टते ।

आह विश्वामित्रः ।

आरोग्यदानाप्तरम् न दानं विद्यते क्वचित् ।

अतीदैश्च रजाकूर्णामारोग्यं भाग्यवहये ॥

अौषधं पथ्यमाहारं वैलाभङ्गप्रतिश्रयं ।

यः प्रथच्छति रोगिभः सभवेद्ग्राधिवर्जित ॥

संवत्सः ।

अौषधं स्वेद-माहार रोगिभा रोगान्तर्च ।

इदामो रोगरहित सुखी दीर्घायुरिष च ॥

### Nandi Purāna

The high-souled man who gives the Brahmins collyrium in charity to cure the diseases of the eye, goes to the Sun (after death) and becomes free from eye deseases, fine-looking and fortunate.

Good health is a step to the acquirement of religious merit, wealth, pleasure and final emancipation, and so the man who bestows cure to the sick and also he who erects a hospital equipped with good medicaments, dresses, learned doctors, servants and rooms for students, always gain them. The doctor should be well-verses in the religious treatises, experienced, familiar with the actions of medicines, a discriminator of the colour of the roots of the herbals and well-acquainted with the

अगस्त्यः ।

अन्नैषधप्रदातारः सुखं यालि निरामया ।

सौर पुराणे ।

रोगिणी शीभ्रान्वर्धमौषवं यः प्रयच्छति ।

रोगहीनः स दीर्घायुः सुखो भवति सर्वदा ॥

नन्दि पुराणे ।

अड्डनं ये नरोद्यादद्वीर्याधिनिहस्ये ।

विश्वाय स पुमान् याति सूक्ष्ययोक्तं भद्रामतिः ।

आरोग्यनदयनी दिव्यः सुभगी जायते नरः ॥

तस्मिन्नेव पुराणे ।

घम्म-र्थ-काम-भीकारणो आरोग्यं साधनैर्युतः ।

अतस्तारीग्नदनेन नरो भवति सर्वदा ॥

आरोग्यज्ञानो तु रति

proper season of raising them from the ground, well-trained with the qualities of the juices, (their strength and actions), शळि rice, meat and medicaments, trained in compounding medicines, one who knows well of the physique of men by intelligence, one who knows the temperament and the qualities of the diet, a pathologist who is not idle, well acquainted with the remedial agents for the premonitory signs and sequelæ of diseases, proficient in the requirements of time and place, well-read in the medical text-books—the Ayurveda with its eight divisions and an expert in curing diseases by domestic remedies (prepared from handful of common ingredients).

The pious man who erects such a hospital in which the services of good physicians of this nature are retained, becomes celebrated as the virtuous, the successful and the intelligent

वैद्यस्तु शास्त्रवित् प्राची दृष्टौपथपराक्रमः ।  
चौषधीमूलवर्णज्ञः समुहरणकालवित् ॥  
रसवैर्धविपाकज्ञः शालिमांसौषधीगमे ।  
योगविहेहिनां देहं यो धिया प्रविशेहुधः ॥  
घातुपथ्यमयज्ञाश निदानविदतन्त्रित् ।  
व्याघीनां पूर्वलिङ्गशस्त्रदुषरविधानवित् ॥  
देशकालविधानज्ञशिकित्साशास्त्रविज्ञाना ।  
अष्टाङ्गायुर्वेदविदा मुष्टियोगविधानवित् ॥

### अष्टावङ्गानि आयुर्वेदस्य ।

यथाश्ल्यं शालाक्षं कायचिकित्सा भूतविद्या लौमारभृत्यमगदतन्त्र रसायशतन्त्र वाजी-  
करणतन्त्रमिति सुश्रुतोक्तानि ।

एवं विधः शुभी वैद्यो भवेद्यज्ञाभियोजितः ।  
आरोग्यशालामवल्तु कुर्यादीर्थर्मसंचयः ॥  
स पुमान् धार्मिको शोषेऽस त्रापार्द्धं सुखुद्विमान्

man in this world. If in such a hospital the kind-hearted man can cure a single patient of his maladies by simple medicines, oleaginous remedies and compounds of medicinal decoctions, goes to the Brahma's residence with his seven generations upwards. The rich and the poor acquire religious merit in proportion to the amount of riches they possess; where would the poor man get a hospital and a young physician to cure his diseases? The man secures the eternal regions mentioned before by rendering the sick healthy by the use of roots to some and by good rubbing (with external applications) to others. He who cures the sick suffering from an increase or decrease of the Air, the Bile and the Phlegm by simple remedies, he too goes to such blessed regions (after death) as are secured by those who perform many religious sacrifices (Yajñas).

व्याधिनं विशेषी हृत्य अप्येकं करुणायुतः ।  
प्रथाति प्रद्वासदनं कुलसप्तकसंयुतः ॥  
आश्ची वित्तामुसारेण दरिद्रः फलभाग् भवेत् ।  
दरिद्रस्य कुतः शाला आरोग्याय भिषग्युवा ॥  
अपिमूलेन कैनापि मर्हनायैरथापि वा ।  
स्वस्थीकृते भद्रेभ्यर्त्तीं पूर्वोक्ते लोकमच्यये ॥  
बात-पिच-कफाद्यानां चया-पचयसेदिनां ।  
यस्तु स्त्राम्बुपायेन नौचयेत् व्याधिपौडितान् ॥  
सीपि याति शुभान् लोकान् अवाप्याम् यज्ञयाजिभिः ।

### स्कन्दपुराणे ।

आरोग्य शालां यः कुर्यात् भहवैद्यपुरस्तुताः ।  
सर्वोपकरणोपेतां तस्य मुख्यकलं शसु ॥  
घर्षा-र्थ-काम-भीक्षाशामारोग्यं साधनं यतः ।  
तथादरीव्य दानेन तद्दत्तं स्याच्चतुर्थं ॥  
अयैकमास्त्रं विदांसं स्वस्थीकृत्य प्रथवतः ।  
प्राप्नोति सुभक्षतम्पुख्यमननं चदवर्जितं ॥  
आन्वीक्षतं इति रीतार्थं शिवकीकिनं  
या स्त्रस्य कुरुते सीपि सर्वदानपूर्वे कमन् ।

### Skandapurāna.

Hear, the amount of religious merit secured by a man who erects a hospital containing all the necessary articles (of treatment) and in which are engaged eminent physicians by reward. As good health is the means of attaining religious merit, wealth, pleasure and final emancipation, therefore, he by rendering the sick healthy, gives these four blessings.

By carefully curing a learned man of his sickness great merit is secured, which is eternal and indestructible. He too who cures a sickman who is calm and absorbed in meditation of Siva and knowledge, attains the virtue of all kinds of gifts. Bramhā, Vishu, all the gods, diseases, relatives and kings—they are obstacles to yoga but not to those who perform it (yogi). Whatever merit is obtained by the great, by supporting the sick Brāhmans (priests), Kshatriyas (warriors), and Bīth (cultivators) and Sudras (servants), can not be obtained by the performance of all the great Yajñas (religious ceremonies). As even the gods can not reach the end of the

ब्रह्मा विष्णुः सुराः सर्वे व्याधयः स्वजना दृपाः ।  
 योगस्यैते भव्याविभ्रां व्याधयस्ते न योगिनां \* ॥  
 ब्रह्म-चक्रिय-विट्-शुद्धान् रोगार्त्तान् परिपाल्य च ।  
 यत्पुण्यं महदाप्नीति न तद्वर्त्तमहामखैः ॥  
 आकाशस्य यथा नातः सुरैरस्युपलभते ।  
 तददारीयदानस्य नातीवै विद्यते व्यचित् ॥  
 पुण्येनानेन महता गत्वा शिवपुरं नरः ।  
 मोदते विविधैर्मौगिर्विभानैः सर्वकामिकौः ।  
 एकविश्वत्कुलीपितः सभृतः परिपालितः ।  
 आस्ति शिवपुरे तावद्यावदाहृतसंप्रवर्ते ॥  
 ततः स्वधर्मशेषिण संप्राप्तः प्रयतः सदा ।  
 ज्ञानमुपद्यते तस्य रुद्रेष्व परिचारक ॥

firmament, so there is no end (to the merit) of the gift of cure. By this great merit, the man reaching the region of Siva enjoys himself by soaring in a balloon which can go to the various desired directions. With his twenty-one generations upwards and surrounded by his servants, he stays in the Siva's realm so long till deluge does not occur. There, after the lapse of his merit, the devoted servant acquires knowledge from Siva.

Abandoning this world by knowledge, abiding by the prayers to Siva, and casting away this body as a straw, he reaches beyond the limits of sorrow. Being freed from all sorrows, becoming pure, all-knowing and self-sufficient, and absorbed in his ownself, they are called the Liberated. Therefore to mitigate the diseases, the sick should be well nursed; the great sages should especially be attended to even by the sacrifice of one's body or riches. The wise must not irritate the weak patients, and they like the preceptors should be rescued constantly from sins. He who relieves the sick, by taking them under his care, reaches the other bank of this ocean of world.

शानाद्विरक्तं संसाराच्छिव्यानमुपायित ।  
 सदैहं द्रष्टव्यतप्रक्षा सर्वदुःखानामाप्नुयात् ॥  
 समसदुःखनिर्भूतं गुईः स्वात्मव्यवस्थित ।  
 सर्वज्ञः परिपूर्णश्च मुक्त इत्यभिधीयते ॥  
 तन्माइगापवर्गार्थं शीर्गतं समुपाचरेत् ।  
 विशेषणं तु शोणीदं शरीरेण धनेन च ॥  
 शीणिषी नीडिजेत् प्राणी दुर्बलानपि सर्वदा ।  
 तान् पापाह्नु रुचत्रिमिवन्वर्म्मः प्रवर्त्तते ॥  
 यीतगृहीतमाक्षान् मन्त्रमानी दिने दिने ।  
 उपसर्वेत शीर्गतस्तीर्त्यस्तेन मधाशंख ॥

इत्यारोग्यदानं ।

After these proofs, the statement of Mr. Ameer Ali that "the Arabs invented chemical pharmacy, and were the founders of those institutions which are now called dispensaries"<sup>1</sup> can not be accepted as correct.

### DISPENSARIES.

As regards dispensaries, Suśrīuta advises the physician to construct his dispensary in a clean locality. and the building should face towards some auspicious direction as the east or the north. He says — "The medicines should be kept in blunt earthen pots arranged on planks supported by stakes or pins".<sup>2</sup> This is still the method of storing medicines used by the *Kavrūjas*. Dallvāṇa explains the passage thus— "The medicines should be kept in pieces of cloth, earthen pots, wooden pots and Śanku (kilaka)".<sup>3</sup> The former explanation is plausible for it is impossible to imagine how a kilaka or stake can be a container of medicine, unless it is implied as a point of support for hanging the medicine vials from it.

Dr Heyne (1814) thus describes the ancient dispensaries of the Hindus "The place in which medicines are kept should

<sup>1</sup> History of the Saracens p 262, 1899.

<sup>2</sup> श्रीतस्त्राणङ्गफलकश्चुविन्यस्तमेषज्ज  
प्रशस्ताया दिशि शूची सेपजागारमिष्ठते ॥

Suśrīuta Saṃhitā I. xxxvii,

<sup>3</sup> गृहीतौषधसंस्थापनोपाधं दर्शयन्नाह;—इतिति । शूतः कर्पटखण्डं, चूदा भाण्डं, स्त्राणङ्गं । फलकं पटकं इति पुस्तकाल्परे पाठः, शूचुः कौलकः, एवेषु श्रीतादिषु विन्यस्तं छृतं भेषजं यथिन् गृहे तत् भेषजागारं भेषजगृहसिष्ठते इति सम्बन्धः । प्रशस्ताया दिशि पूर्वस्थामुच्चरस्या वा, शूचौ देशे अस्मिन् सूर्यमप्रविभागीयाभ्यायै, निकर्मेषु व्यत्ययैन च पाठी दृष्टते । अस्माभिस्तु उड्ढक्तमरीयैव पाठो लिखित इति सर्वावयवसाधेष्वित्यादि यावद्वर्तं दृव्यं पुराणस्त्रिपाठ

त्रष्टव्य ॥

be clean, dry, and not accessible to rats, white ants or dust. The drugs ought to be put in nets, or large pots, the mouth of which must be tied over with a piece of cloth, and suspended in a room. Fire, smoke and water must be kept at a distance

The house in which medicines are stored, should be neither in too high nor too low a situation, and it should not be far distant from places in which medicines may be collected. Its front should face either the south or the north, with a convenient *virunda* before the door of the same side.

The necessary apparatus for mortars, scales, &c, must be kept in a place in the wall that has been consecrated for that purpose by religious ceremonies” .

After describing the different classes, and members composing each class, of medicines, Suśruta continues. “The wise physician should collect and classify these medicines, and with them prepare external applications, infusions, oils, ghee, syrups, &c, as required for derangement of a particular humour. The medicines should be carefully preserved in all seasons, in rooms free from smoke, rain, wind and dust. The medicines should be used singly, or in combinations of several medicines of a class, or of an entire group, or of more than one group, according to the nature of the disease, and the extent of derangement of the humours.”<sup>2</sup>

<sup>2</sup> एभिर्वेद्यान् कथायाऽच्च तैल सर्पीं विपानकान् ।  
प्रज्ञमज्जय यथात्वाचं कुर्वीति सतिसान् सिषक् ॥  
मूसवर्धनिलक्ष्मेदः सर्वं सुखनभिदुते ।  
माहयित्वा यद्देव त्वयेदिविनौषधसयहं ॥  
समौद्य दीभेदाऽच्च गणान् भिन्नान् प्रयीजयेत् ।  
प्रयत्नित्राण् समसान् वा यत्वं वा अस्तु च ॥

## ANÆSTHETICS.

In the medical text books of the Hindus, there is no mention of a general anæsthetic, from which we can infer that it was unknown in those ancient days. There are, however, many indications to show that the earlier surgeons felt the necessity of such an agent to produce insensibility to pain. Both Caraka and Suśruta mention the use of wine to produce the desired effect. Caraka says. "After extraction of a dead fœtus before the full term of pregnancy, wine should be prescribed to her, for that will improve the condition of her uterus, make her happy and alleviate the pain of the operation."<sup>1</sup> Suśruta, however, distinctly lays down that "wine should be used before operation to produce insensibility to pain." He again remarks: "It is desirable that the patient should be fed before being operated on. Those who are addicted to drink and those who cannot bear pain, should be made to drink some strong beverage. The patient, who has been fed, does not faint, and he who is rendered intoxicated, does not feel the pain of the operation."<sup>2</sup>

The use of certain drugs to produce anæsthetic effects was well known to the ancient Greeks and Romans. Dioscorides

<sup>1</sup> व्यपगलग्भश्चल्यानु स्त्रियमासगर्भा सुराशौधनस्त्रिमधुमदिरासवानामन्यतमनये सामर्थ्येतः पायदीत गर्भकीष्टविशुद्धपूर्वमर्त्तिविचारणार्थं प्रहर्षकार्यं ॥

Caraka Samhitā, IV, viii.

<sup>2</sup> प्राक्शस्त्रकर्मणश्चेष्ट भोजयेदातुर भिषक् ।  
नदाप पायदीन्द्रियं कीर्त्त्य योऽवेदनासङ्घः ॥  
न मूर्च्छ्यवसंविशामतः शस्त्रं न बुध्यते ।  
तस्मादवश्यं भीक्तव्यं रीयेषुत्तेषु कर्मनि ॥  
प्राणी ह्याभ्यन्तरी नृणां वाह्यप्राणगुस्तान्वितः ।  
— — — भरीर पाष्ठमौषिकं ॥

mentions Mandragora (*Mandragora Atropa*) to have been employed internally as a hypnotic and anaesthetic Pliny (32-79 A.D) in his Natural History mentions that this anaesthetic was also used by inhalation, and this fact is corroborated by Galen, Aræteus, Celsus and others. The Arabian physicians also used it. The Chinese surgeons still use some powder (Indian hemp probably) to throw their patients into profound sleep. In the 13th century Theodoric (died 1298) described the "spongio somnifera," the vapours raised from which were capable, when inhaled, of setting patients into an anaesthetic sleep, thus inducing insensibility to the agony and torture of a surgeon's knife. Baptista also mentions his "Pomum somniferum" to be made with mandragora, opium, &c. The Hindus also inhaled the fumes of burning Indian hemp as an anaesthetic at a period of great antiquity. As early as 927, A. D., they also knew drugs which they employed for the same purpose, for Pandit Vallala, in his *Bhoja Prabandha*, alludes to a cranial operation performed on the King Bhoja after he was rendered insensible by some drug called Sammohini (producer of unconsciousness). Another drug is also mentioned, Sañjibani (restorer to life), by which he soon regained consciousness after the operation had been finished.<sup>1</sup>

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<sup>1</sup> तवस्तावपि राजान् भीहचूर्णेन भीहयिला शिरःकपालमादाय तत्करोटिकापुटे स्थित शफरकुलं गृहीत्वा कस्मिंश्चिह्नाजने नित्यं सन्धानकरणया कपालं यथावदारचय्य सञ्जीवन्ना च तं जीवयिला तच्चै तद्वृथ्यताम्।

## CHAPTER III

### MATERIALS OF INSTRUMENTS.

#### IRON AND STEEL

In the R̄gveda, *ayas*, (Latin *aes*), next to gold, is the metal most often referred to. *Ayas* often stands as a generic name to mean simply "metal," though in later works it signifies iron as a rule. The mention of dark and red *ayas* in the Atharva-veda indicates a distinction between iron and copper or bronze. The surgical instruments of the Hindus are recommended generally to be made of iron, but Suśruta allows other suitable material when iron of good quality is not available.<sup>1</sup> He says: "A wise surgeon should get the instruments made of pure iron and with sharp edges by an expert blacksmith who is skilful and experienced in his craft."<sup>2</sup> The use of impure iron as a material for surgical instruments, he deprecates as a defect and advises the surgeons not to rely on such instruments.

The Hindus were acquainted with steel and they knew how to turn out steel of fine quality from a pure iron ore. Nāgarjuna, the well known Buddhist chemist, wrote a scientific

<sup>1</sup> तानि प्रायश्ची लौहानि भवन्ति वत्प्रतिरूपकारणि वा तदलाभे ।

Suśruta Samhitā. I viii

<sup>2</sup> शस्त्राष्टेतानि भतिमान् शुद्धशेक्षयसानि तु ।  
कारयेत् कर्त्त्वे प्राप्तं वर्ष्मारं वर्ष्मारोचिदं ॥

Ibid. I viii,

treatise on steel and iron.<sup>1</sup> Śibodāsa in his commentary on Chakrapāṇi quotes Patañjali as an authority on the subject.<sup>2</sup> In the Dhanurveda, Viracintāmaṇi, Śāraṅgadharapaddhati and Lehārnava, steel as a material of sword has been described and classified.

Dr. Mitra quotes some references<sup>3</sup> about the knowledge of iron possessed by the ancient Hindus from the Rgveda. He finds that "swords (II. 156), spears (IV. 25), javelins (II. 292), lances (I. 774), (IV. II. 288) and hatchets (I. 120) are frequently mentioned; and these weapons were bright as "gold" or golden (IV. 19), "shining bright" (I. 175), "blazing" (IV. 93), "sharp" (IV. 113) and "made of iron" (I. 226); they are "whetted on a grind stone (II. 36) to improve their keenness (I. 150), and "polished to enhance their brightness" (II. 326).... According to Nearchus, King Porus gave 30 lbs of steel to Alexander as the most precious present he could offer."

Royle also remarks<sup>4</sup>: "Working in metals they have long been famous for: their steel acquired so great celebrity at an

<sup>1</sup> नागार्जुनी मुनीन्द्र शशास यज्ञोऽग्नास्ततिगहनम्।

तस्यार्थस्य अृतये वयसेत्विश्वाचरैर्द्वूसः ॥

Cakradatta, Rasāyanādhikāra.

<sup>2</sup> अर्चियदा विधानेन हिरवं गुरुभास्करौ।

लोकपालान् गृहाशैव चेवपालान्थौषधम्।

आदिवदेवतासेषा धन्वन्तरौ-पतञ्जली

दद्याहत्विच्च सर्वेभ्यो नानाभन्नोपचारतः ॥

Quoted in Śibodāsa's commentary on Louhamārana-

Vidhi in Cakradatta.

<sup>3</sup> Dr. R. L. Mitra's Indo-Aryans, Vol. I P 301. See Wilson's Rgveda.

\* Roy on Antiquity of Hindoo Medicine, Pp. 46-7

early period, as to have passed into a proverb among the Persians, where *fouloules hind* indicates steel of the best quality; and *juwabee hind*, an Indian answer, means a cut with a sword made of Indian steel.'

### COPPER

Pure copper was also used as a material of instruments, and vessels and instruments of copper are frequently mentioned in the medical books of the Hindus. A copper probe for applying antimony to the eye has been found in the excavations of Bijnor and another in the Bihat excavations Cakradatta<sup>1</sup> advises us to use a copper probe for the application of *lekhana* collyrium, and Suśruta mentions a copper needle in the operation for réclination of cataract<sup>2</sup>

### TIN

Tin was also used as a material of blunt instruments. Suśruta mentions plates of tin to surround a tumour and to protect the healthy parts, before the application of actual cautery.<sup>3</sup> Such plates are recommended to be made of tin, or lead, or copper, or iron.

### LEAD.

Tubes of lead were used for purpose of fumigation. Probes made of lead were used for application of collyrium. The use

<sup>1</sup> प्रशस्ता लंखने ताकी रोपने कालखीहजा।

Cakradatta, Añjanadukāra.

<sup>2</sup> तामायसी शातकौमी शत्रुका स्यादनिन्दिवा।

Suśruta Samhita, VI xvii

<sup>3</sup> अल्यावश्चिष्टे ज्ञमिभिः क्रते च लिखितोऽभिं विदधीत पशात्।

यदन्यमूलं तपुतामसौस पदेः समावेष्य तदायसैर्वा।

चारादिग्रन्धास्य सकृदविदध्यात् प्रानाश्चिंसन मिष्वप्रभत्।

of lead plates to surround tumours before application of actual cautery has been noted above.

### BELL-METAL

The use of bell-metal—an amalgam of zinc or tin and copper, 25 parts of the former with 75 parts of the latter,—as a material of probes for applying collyrium, is mentioned by Suśruta<sup>1</sup>

### GOLD AND SILVER

Gold was known to the Hindus from the remote antiquity, and among the metals, it is the one most frequently<sup>2</sup> mentioned in the R̄gveda. Silver was perhaps unknown during the earlier Vedic age, from its name being not mentioned in the R̄gveda. But no conclusion can safely be drawn from this argument<sup>3</sup>. We find, however, gold, silver, and other precious

<sup>1</sup> सौवर्णं राजतं शार्दलाद् वैदुर्यकांसप्रज्ञ

आयसानि च धीज्ञानि शलाकाश्च यथाक्रमे ॥

Suśruta Samhitā, VI. xviii.

<sup>2</sup> “निष्ठ दीप”

R̄gveda. 5 Mandala 19 Sūkta.

“निष्ठेन सूवर्णं न अलङ्घता दीपा” ।

Sāyana.

अस्मि न हेत्यावान् ।

Ibid. 4 Mandala, 2 Sūkta.

“सूवर्णं निर्दित कल्यावान् अस्मः” ।

Sāyana.

“A horse with golden caparisons”—Wilson.

<sup>3</sup> “एनी रवि” ।

R̄gveda. 5 Mandala 33 Sūkta

एनवर्णा चेत्वर्णा रथि धनं ।

Sāyana.

Query if silver money be intended”